

RESILIENCY OF ACEHNESE CHILDREN

A bio-ecological perspective
on children's patterns of adaptation
to adversities caused by the 2004 tsunami

Yohana Ratrin Hestyanti

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*for my best friend, lovely sister in Christ,
Cicilia Yeti Prawasti*

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by

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Table of Content

Table of Content.....	9
Glossary	12
Chapter 1 The Tsunami and the Resilience of Acehnese Children	13
1.1 The Tsunami and the Acehnese Social Cultural Context	13
1.2 The Impact of the Tsunami on Acehnese Children	14
1.3 Resilience after Experiencing Traumatic Events	15
1.4 Resilience, Vulnerability, Risk and Protective Factors.....	17
1.5 Bio-Ecological Perspective on Child Resilience	19
1.6 The Importance of this Study.....	21
1.7 Research Questions	22
1.8 Research Design	22
1.9 The Structure of the Manuscript	22
Chapter 2 A Bio-Ecological Perspective on Acehnese Children’s Resilience Following the Tsunami	25
2.1 The Tsunami and the Nature of a Mass Disaster	25
2.2 Child Trauma Reactions Following a Mass Disaster	26
2.2.1 The Classification of Trauma Reactions.....	28
2.3 Child Resilience after a Mass Disaster	29
2.3.1 Defining Resilience in Children Following a Disaster	31
2.3.2 Risk and Protective Factors in Child Resilience.....	33
2.4 Bio-Ecological Theory and Resilience Processes in the Context of Aceh after the Tsunami	34
2.4.1 Process.....	35
2.4.2 Person	36
2.4.3 Context	38
2.4.4 Time.....	48
Chapter 3 Mixed-Methods Approach to Understand the Children and their Environment after the Tsunami	51
3.1 Approaches	51
3.1.1 Ethnographic Approach	51
3.1.2 Case-study Approach.....	52
3.1.3 Self-report Questionnaire.....	53
3.2 Roles of the Researcher.....	53
3.3 Criteria of Participant Selection and Recruitment Processes	54
3.3.1 Selection of the Villages	54
3.3.2 Criteria for Participants and Recruitment of Subjects	55

3.4 Instruments.....	58
3.4.1 Interviews	58
3.4.2 Observation.....	58
3.4.3 Questionnaire.....	59
3.5 Ethical Issues	59
3.6 Validity or Credibility of the Study	60
3.7 Process of Data Collection	61
3.7.1 Preparation Phase (February, August, and November 2005).....	61
3.7.2 First Data Collection Phase (January – March 2006)	62
3.7.3 Second Data Collection Phase (March – October 2006)	63
3.7.4 Feedback and data Validation (July 2009)	63
3.8 Data Management and Analysis	63
 Chapter 4 Children’s Personal Experiences before and after the Tsunami: an Ethnographic and Case Study in the Four Villages.....	 67
4.1 Traumatic Experiences and Family Loss in the Tsunami	68
4.1.1 Terbeh Village	69
4.1.2 Lambaro Skep Village	70
4.1.3 Tanjong Village	73
4.1.4 Lampineung Village	76
4.1.5 Threat and Support from Personal Traumatic Experiences Caused by the Tsunami	79
4.2 Traumatic Grief Reactions, Recovery, and Changes in Individuals’ Behaviour.....	80
4.2.1 Terbeh Village	81
4.2.2 Lambaro Skep Village	82
4.2.3 Tanjong Village	85
4.2.4 Lampineung Village	86
4.3 Post-tsunami Housing, Financial, and Psychosocial Aspects in the Villages	88
4.3.1 Terbeh Village	91
4.3.2 Lambaro Skep Village	92
4.3.3 Tanjong Village	93
4.3.4 Lampineung Village	94
4.3.5 Comparison of the Four Villages.....	95
4.4 Kinship Systems in Aceh and their Manifestation in Neighbourhoods	96
4.4.1 Extended Family as Close Neighbours in the Four Villages	96
4.4.2 Support and Pressure from Close Neighbours	98
4.5 The Role of Islam in Dealing with Life after the Tsunami	100
4.5.1 Interpretating and Explaining the Tsunami.....	100
4.5.2 Religious Practices in the Community and Family.....	102
4.5.3 Children’s Forms of Religious Coping.....	105

Chapter 5 Children's Patterns of Adaptation and Factors in their Bio-Ecological Systems	107
5.1 Assessment of Study Variables.....	107
5.1.1 Patterns of Adaptation	107
5.1.2 Trauma Symptoms One Year after the Tsunami	111
5.1.3 Risk and Protective Factors in the Children's Bio-ecological System	113
5.2 Qualitative Analysis	118
5.2.1 Patterns of Adaptation of the Children	118
5.2.2 Children's Trauma Symptoms One Year after the Tsunami.....	121
5.2.3 Children's Patterns of Adaptation and their Bio-ecological Systems	124
5.3 Quantitative Analysis.....	151
5.3.1 Patterns of Adaptation and Factors in the Bio-ecological Systems of the Children	152
Chapter 6 Discussion, Conclusions, and Recommendations.....	155
6.1 Discussion.....	155
6.1.1 Processes.....	155
6.1.2 Person	156
6.1.3 Context	159
6.1.4 Cumulative Risk Factors and Cumulative Protective Factors	164
6.1.5 Time.....	165
6.1.6 Strengths and Limitations of the Study.....	166
6.2 Conclusions and Lessons Learned	167
6.3 Recommendations	169
References.....	173
Appendices.....	183
Summary	193
Samenvatting.....	203
Acknowledgements	207
Curriculum Vitae.....	209

Glossary

Adat	Custom
Allahu akbar	God is the Greatest
Anak yatim	Orphans
Azan	Call for prayer
BRR	Badan Rehabilitasi dan Rekonstruksi (Rehabilitation and Reconstruction Agency)
Dzikir	Prayer after obligatory sholat
GAM	Gerakan Aceh Merdeka (Free Aceh Movement)
Gampong	Village
Hadith	Tradition of the prophet
Hijab	Traditional Muslim women's head and body covering
Hikmah	Positive lessons or insights after an unfortunate event
Imeum	Religious leaders
Karong	Men and women from the maternal line
Keuchik	Village leader / head of the village
Lapangan bola	Soccer field
Likok pulo	Aceh traditional dance
Meunasah	Small praying hall
Mitapeng	Breadwinner
Nyebut	Call on God's name
Pengajian	Communal Koran reading
Peuso 'om breuh	Cooking rice
PKPA	Pusat Kajian dan Perlindungan Anak (Centre for Study and Child Protection)
Rumoh Aceh	Traditional houses of Aceh
Seramoikeue	Guest room for male guest
Seramoilikot	The place for female guest
Seudati	Aceh traditional dance
Sholat	Formal Islamic prayer
Sholat jamaah	Communal prayer
Sholat tahajud	Praying during the night
Subuh	Morning prayer
Sunnah	Optional
Takdir	Destiny
Tauziah	Preaching by religious leaders
Tawakal	Being in total submission to God
Tengku	Religious leaders
TNI	Tentara Nasional Indonesia (Indonesia National Military)
TPA	Taman Pendidikan Alquran (Koran reading centre)
Ustad	Male religious leader
Ustadzah	Female religious leader
Wali	Man of the paternal line
Warung	Foodstall
Wirid	Religious activities for women

Chapter 1

The Tsunami and the Resilience of Acehese Children

1.1 The Tsunami and the Acehese Social Cultural Context

On December 26, 2004 at 07:58:53 Western Indonesian local time, an earthquake occurred which registered 9 on the Richter scale. The earthquake caused tsunami waves 30 meters high and with a speed of 500 miles per hour. As a result, vast areas were seriously affected in eleven countries in Southeast Asia and East Africa, including Indonesia, India, Sri Lanka, Thailand, Somalia, Tanzania, Kenya and the Seychelles. More than 230,000 people died or were reported lost (Kawilarang, 2008).

Aceh, one of the 33 provinces of Indonesia, is situated on Sumatra's northern tip, and was the area worst affected by the tsunami. Approximately two-thirds of the residential areas in the coastal regions of Aceh and in the provincial capital of Aceh, Banda Aceh, were devastated during the tsunami. Around 127,000 people died, 93,000 were considered lost, including a significant number of government officials, teachers, religious leaders, NGO-staff, and other figures who played important roles in the Acehese society, and 500,000 became internally displaced (Republic of Indonesia – Bappenas, 2005). Some 120,000 houses, 2,224 schools, and 260 bridges were destroyed, and 800 kilometres of roads were rendered impassable. The loss of employees, buildings, etcetera, paralysed the local government. The estimated material loss amounted to 4.5 million US dollars (Kawilarang, 2008).

Aceh is strategically located for India, Arabia, and the West. Having the first port in Indonesia, this region provided spices such as pepper and betel nut to Indian and Arab traders as early as the 11th century (Reid, 2005). With its strategic location and natural resources in the agriculture and forestry sectors, Aceh became an important centre of trade, reaching its glory in the 14th century as the Kingdom of Samudra Pasai. Later on, in the early 16th century, Europeans came to look for spices, beginning with the Portuguese and British, and later the Dutch. Between the 18th and 20th centuries, the Dutch colonized most of the Indonesian archipelago, except Aceh (Kawilarang, 2008; Reid, 2005).

Its strategic location and abundant natural resources were also the reasons for the long wars waged in Aceh, mainly against the Netherlands (1873-1903) and Japan (1942-1945). There were also periods of armed conflict with the government of the Republic of Indonesia during the presidencies of Soekarno, Soeharto, and Megawati between 1953 and 2004 (Kawilarang, 2008; Reid, 2005).

In the late 13th century, Indian and Arab traders brought Islam to the region. Samudra Pasai became the first Islamic kingdom in the archipelago and became part of an important Muslim trade route (Reid, 2005). Islamic values were acculturated, became very important, and were passed on from generation to generation (Melalatoa, 2005; Reid, 2005). Their strong influence is still evident in various elements of the Acehese culture, such as the legal, social and educational systems. Islamic

norms and values also influenced economic development and the arts (Djamal, 2007; Hadi, 2010; Melalatoa, 2005; Satriani, 2008). The strong relationship between Islamic norms and values and Acehese customs is expressed in the well-known traditional Acehese saying *Hukom Ngon Adat Lagee Zat Ngon Sifeut*. This means that the relationship between the Islamic Sharia and Acehese customs (*adat*) is inseparable, like substance and its nature. In general, the Acehese are known as devoted followers of Islam, and are sometimes even called 'fanatics' (Melalatoa, 2005).

With regard to the kinship system, extended families play a very important role in the life of Acehese people. The extended family includes a number of individuals who are considered part of the family because of the bonds of marriage from the lineage of both husband and wife. Basically, the Acehese follow a patriarchal system at the administrative level, but a matriarchal system regarding their after-marriage placement. This means that after marriage, the husband will normally settle in the neighbourhood of his wife's relatives. Extended families, therefore, usually live together within the same village (*gampong*). This phenomenon implies that children and family have support systems within their neighbourhood (Melalatoa, 2005; Reid, 2006; Satriani, 2008).

Aceh had not only experienced many wars in the past, but also in the time period immediately preceding the tsunami. From 1976 onwards, the Acehese had experienced armed conflict between the Free Aceh Movement (GAM: *Gerakan Aceh Merdeka*) and the Indonesian government. The Acehese had to live in constant fear and terror for long periods. Adults and children often had to witness or experience extreme violence, killings, and eviction (Cahyono, 2008; Irwanto & Nurpatricia, 2007). They often could not leave their homes even to go to work or school, out of fear of being caught in the crossfire (Irwanto & Nurpatricia, 2007). Education and issues of social development were not a priority in this tense and unstable conflict situation, which explains the low quality of education in Aceh (Cahyono, 2008; Irwanto & Nurpatricia, 2007; Kawilarang, 2008).

Even after the tsunami struck, the armed conflict did not stop, even though each party claimed that they offered a cease-fire soon after the tsunami and focused on humanitarian activities to help the survivors. In fact, violence and shooting incidents between the two parties were registered on several occasions (Maslan, 2005). A Memorandum of Understanding (MoU) between the Free Aceh Movement and the Government of Indonesia was achieved in Helsinki in August 2005. This MoU stopped 30 years of violence that had cost over 15,000 lives (Kawilarang, 2008). In this way, the tsunami brought more peaceful circumstances for the Acehese.

1.2 The Impact of the Tsunami on Acehese Children

Because of the massive nature of the catastrophe, the tsunami brought sorrow to thousands of people. Those who survived the tsunami had almost nothing left: no houses, no belongings, and no jobs. A large number of the survivors also had lost their loved ones. Among the survivors, children were the most vulnerable. Children were especially susceptible to the negative impact of this tragic

event because they often had lost one or both parents or had lost siblings and were thus separated from those who had provided them with safety and comfort (Suyanto, 2005). Some had to stay in barracks or a camp for more than a year¹ under conditions detrimental to their physical and psychosocial well-being. Moreover, the tsunami was followed by repeated earthquakes and violent storms, which frightened children and adults alike. In the barracks or tents, it was very cold at night and very hot during the day. Children were susceptible to illness, received poor nutrition, and were exposed to an unhealthy environment, physically as well as psychologically (BRR, Badan Rehabilitasi dan Rekonstruksi, 2005).

Furthermore, parents or caretakers were also in a stressful situation, not only because of the traumatic impact of the tsunami, but also due to the lack of financial resources after the disaster. As a consequence, adult attention to and support for the development of the children was severely reduced (Suyanto, 2005). Many caregivers had to prioritize their household finances and income-generating activities, often leading to neglect of the children's development. Some of them even maltreated their children. The circumstances were very difficult. For those who had to be relocated to different places with different living arrangements, for example fishermen who had to move to the mountains, adapting to the new circumstances was an additional challenge and stressor.

In the preamble to the Convention of the Rights of Children, ratified by Indonesia in 1990, it is stated that "the child, by reason of his physical and mental immaturity, needs special safeguards and care"². Children need a safe and decent home and environment, and need to live a regular life. However, the tsunami deprived many children of their basic needs, with many negative consequences for their physical, mental, and social development.

1.3 Resilience after Experiencing Traumatic Events

Because of the massive destruction and casualties caused by the tsunami, in the early phase of recovery, people expected that many children would develop a post-traumatic stress disorder (PTSD) or other mental disorders (Sutanto 2005; Thufail, 2005). Moreover, it was considered quite possible that their tsunami-related traumas might aggravate existing vulnerabilities, such as those caused by the armed conflict. Multiple and ongoing traumas may result in conditions such as depression, aggression, anxiety, withdrawal, rebelliousness (Carlson & Dalenberg, 2000; Consuelo, 2005; Irwanto & Nurpatricia, 2007; Jagodic & Kontac, 2002; Webb, 2004) and susceptibility to developing PTSD (Groome & Soureti, 2004; Koverola, 1995; Neria, Nandi, & Galea, 2008; Neuner, Schauer, Catani,

¹ The present study was done one year after the tsunami, from January – October 2006

² <http://www2.ohchr.org/english/law/crc.htm>

Ruf, & Elbert, 2006; Piyasil et al., 2007; Silva & Kessler, 2004; Tjhin, Guerrero, Kaligis, & Khamelia, 2010).

However, as time passed, many observed that this was not the norm. Tirana Hassan, a protection specialist working for the aid organization Save the Children said: *there is an incredible resilience amongst children here.....You see a lot of adolescents, for instance, trying to be very strong and take care of their younger siblings and they're taking on more adult responsibility, which of course causes a concern on some levels but is also a credit to them how resilient and strong they can be* (Collins, 2005)³. Many social workers who worked with children in Aceh mentioned how well Acehnese children were able to cope with their situation. They described Acehnese children as cheerful, laughing spontaneously, helping each other, being actively involved in intervention programs, speaking confidently in front of people, and showing many other kinds of positive behaviour (Hestyanti, 2006)⁴. It was amazing to see that in this complex and highly stressful situation in Aceh, many children showed strength and resilience.

Various studies on the situation of children who experienced adverse conditions have revealed that despite many adversities in their lives, e.g. prolonged exposure to poverty, parental psychopathology, or chronic family discord, relatively few of these children develop serious or persistent behaviour problems (Garmezy, 1983; Werner, 2005). In the case of the Acehnese, experiencing difficult life events such as armed conflict may even have *enhanced* their ability to cope with new stressors related to the tsunami. Living through a prolonged armed conflict may lead children to learn skills for dealing with adversities, which help them cope with future traumas. The Acehnese have learned to accept that life is difficult but that they have to continue living (Cahyono, 2008; Melalatoa, 2005).

A longitudinal study on 1,625 child survivors of the 2004 tsunami in Thailand showed that the prevalence rate of PTSD symptoms at 6 weeks, 6 months, 1 year, 1 ½ year, and 2 years after the tsunami were 57.3, 46.1, 31.6, 10.4, and 7.6%. This means that even though the prevalence of PTSD at six weeks after the tsunami was high (57.3%), it declined sharply in the course of two years (down to 7.6%) (Piyasil et al., 2007).

In Aceh, a study on 2,135 children exposed to the tsunami revealed that one year after the tsunami, around 9% of the trauma-exposed children met the criteria for a mental disorder, which was mostly (5.4%) PTSD (Tjhin, Guerrero, Kaligis, & Khamelia, 2010). Considering the enormity of the disaster, this prevalence was lower than had been expected. Another study in another area of Aceh found a similar prevalence of PTSD (i.e., less than 10 %, Hartini, 2010). No information was given on

³A VOA journalist, see <http://www1.voanews.com/english/news/a-13-2005-02-24-voa64.html>. Child victims of Asia's devastating tsunami cope with trauma. Accessed on 24 Feb 2005.

⁴ An author's preliminary study of Acehnese children's resilience, published in 2006 in the *Annals of the New York Academy of Science*, 1094, 303-307.

how long after the tsunami the data were collected, but these reports indicated that there were resilience factors, which may have contributed to a lower, level of PTSD prevalence than was previously expected.

From studies by Piyasil et al. (2007) and Tjhin, Guerrero, Kaligis, and Khamelia (2010), it can be concluded that after encountering traumatic events, it is normal for children to have severe post-traumatic reactions but these symptoms gradually decrease within one or two years. About 10-15% of the survivors of traumatic events continue to suffer from psychological dysfunction after this initial period of time (Bonanno, 2004). In other words, most survivors do not continue to have emotional or psychological disturbances, and find ways to adapt to the changes and challenges brought about by the tragic events. According to Masten (2001), this phenomenon is related to the *ordinary magic* that is commonly found in human beings as a part of their adaptation systems. This phenomenon is also known as *human resilience*.

1.4 Resilience, Vulnerability, Risk and Protective Factors

Resilience is a pattern of positive adaptation in the context of significant risk or adversity (Luthar & Zelazo, 2003; Masten & Powell, 2003; Riley & Masten, 2005; Rutter, 1990; Werner, 2005; Wright & Masten, 2006). Resilience is not a trait of an individual, even though the manifestation of resilience can be perceived in an individual's pattern of behaviour (Masten & Powell, 2003). Therefore, resilience is not an attribute of children that can be directly measured. Rather, it is a process of, capacity for, or pattern of positive adaptation during or following exposure to adverse experiences (Masten & Obradovic, 2008). According to Masten and Wright (2009) *resilience concerns the processes and outcomes of good adaptation in relation to significant threats* (p. 216).

In order to judge positive adaptation as a sign of resilience, a developmental perspective is needed (Luthar & Zelazo, 2003; Masten & Wright, 2009). For example, school-age children may show resilience by being successful in school, relating well to peers and adult authorities in school and at home, and behave appropriately in society (Masten & Wright, 2009; Radke-Yarrow & Sherman, 1990). According to Wright and Masten (2006) the definition of good outcome can include the child's ability to meet the expectations according to age and gender within the framework of socio-cultural and historical events.

As mentioned previously, disasters may cause PTSD or considerable difficulties in some survivors, including children. This means that some children may experience a negative pattern of adaptation in dealing with the adversities caused by a disaster. These children can be perceived as *vulnerable* (Zucker, Wong, Puttler, & Fitzgerald, 2003). Vulnerability does not necessarily mean *non-*

resilience. Resilience is not a matter of all-or-none, but of more-or-less⁵. The current study follows the notion of a continuum of adaptation with resilience and vulnerability at the opposite ends. Hence, positive (successful) adaptation in the face of adversities refers to resilience, and negative (problematic) adaptation refers to vulnerability (Agaibi & Wilson, 2005; Zucker, Wong, Puttler, & Fitzgerald, 2003).

Masten and Obradovic (2008) described positive and negative patterns of adaptation in the aftermath of a massive trauma such as a natural disaster. As positive or resilience patterns, there are *Stress Resistance*, *Recovery*, and *Positive Transformation* patterns. Stress Resistance refers to “patterns of reasonably steady and positive adaptive behaviour in the presence of significant threats”. Recovery happens when there is a decline in the individual’s adaptive functioning because of the acute adversity, but which is then followed by a return to the previous positive level or previous adaptive functioning as the crisis abates. Positive Transformation occurs in situations when a person has an improved level of functioning in response to a crisis and its aftermath. As negative or vulnerable patterns, there are *Delayed Breakdown*, *Breakdown without Recovery*, *Persistent Maladaptive* or *Negative Transformation* patterns. When Stress Resistance is followed by a breakdown in functioning, this is called a Delayed Breakdown. A failing down in functioning without improvement reflects a Breakdown without Recovery pattern. Persistent Maladaptive or Negative Transformation patterns occur in situations in which the crisis aggravated the situation for an individual who already functioned poorly.

In this study, we follow Masten and Obradovic’s patterns of adaptation classification that represent resilience and vulnerability. As required by their classification, the level of functioning of the children was measured during three consecutive periods of time, i.e., before, immediately after, and one year after the tsunami (Masten & Obradovic, 2008).

What differences are there between children who show positive patterns of adaptation and those who show negative patterns of adaptation in the face of adversities? What factors contribute to such differences?

Children’s adaptation to massive traumas such as those caused by natural disasters is influenced by several factors. Many studies have explored factors and processes that promote or inhibit resilience in the context of adversities (Garmezy, Masten, & Tellegen, 1984; Masten & Wright, 2009), because, obviously, such knowledge can greatly increase the quality of disaster responses of government and NGOs. Interestingly, these studies found indications for particular

⁵ The researcher prefers the term ‘vulnerable’ to ‘non-resilient’ in order to address the life-span trajectory approach as suggested by Rutter (2006). The term vulnerable (or ‘less resilient’) better reflects the possibility that children who experience difficulties coping with enormous adversities, nevertheless may thrive later in life when the adversities encountered are less overwhelming or when their lives lead to better opportunities.

patterns of association between risks and protective factors on the one hand, and adaptive outcomes on the other.

Risk factors are described as characteristics of individuals or their situation that may inhibit normal development and induce negative outcomes (Cumming, Davies, & Campbell, 2000; Riley & Masten, 2005; Wright & Masten, 2006). Examples of risk factors are difficult temperament, a poor parent-child relationship and poverty (Wright & Masten, 2006). Protective factors are qualities of a person or context that may act as a buffer and can induce better outcomes in the event of trauma, crisis, or other forms of adversity (Mohr, 2002; Riley & Masten, 2005; Werner, 2005; Wright & Masten, 2006). Protective factors help the individual to adapt well when facing high levels of risk or adversities. Examples of protective factors are an easy-going temperament, a secure-attachment relationship and a high neighbourhood quality (Wright & Masten, 2006).

Risk and protective factors may be present at four levels: (1) child, (2) family, (3) community, and (4) culture or society (Wright & Masten, 2006). Masten and Powell (2003) point out that an individual is rarely confronted with only a single risk factor, as the presence of a risk usually means the presence of other related risks. This is important, because the persisting existence of cumulative risk factors may hinder the proper development of a child (Mohr, 2002). That is also true for protective factors: protective factors usually co-occur. The more sources of protection a child has, the more likely s/he is to adapt well when facing adversities (Wright & Masten 2006).

With regard to the resilience process of children after massive traumatic experiences, risk and protective factors can be present at all levels of the child's bio-ecological system and can contribute to the child's adaptation process (Luthar & Zelazo, 2003; Mohr, 2002; Riley & Masten, 2005; Rutter, 1990). It is important to understand the underlying processes and the dynamic interactions between individual factors and their ecological systems that lead to positive and negative patterns of adaptation (Wright & Masten, 2006).

1.5 Bio-Ecological Perspective on Child Resilience

This study uses Bronfenbrenner's bio-ecological theory of human development to look at Acehnese children's resilience and vulnerability. Four considerations led to the choice of Bronfenbrenner's theory for this study. First, because the subject of the study is the adaptation of *children*, the theory of human development is very relevant. Second, Bronfenbrenner's theory emphasizes the process of reciprocal interactions between person and context. This is in line with a resilience perspective, as resilience is strongly related to dynamic interactions of individuals and their environment (Masten & Wright, 2009). In addition, Bronfenbrenner employs a perspective which promotes healthy development throughout the life-span and this viewpoint is intertwined with the idea of resilience.

Third, the tsunami was a massive disaster that destroyed almost all systems in Aceh that were very important for children's development. Therefore, the multisystem characteristics of Bronfenbrenner's theory form a suitable framework for gaining a thorough understanding of the adaptation process with reference to many different levels of the context in which an individual lives.

Fourth, Bronfenbrenner's model is particularly relevant to the situation in Aceh because the Acehnese culture has strong and extensive kinship systems and is characterized by interdependent relationships between the individuals and their society. Therefore, Bronfenbrenner's model might facilitate our understanding of how culture and other aspects of the children's environment contributed to their process of adaptation after the tsunami.

The *Process – Person – Context – Time* model is the essence of Bronfenbrenner's theory. With regard to the *process*, he considers the proximal process as the key influence in human development (Bronfenbrenner, 1979, 2005; Bronfenbrenner & Morris, 1998). The proximal process is the complex interaction occurring over an extended period of time between the developing person and the people, objects, and symbols in his/her everyday context. The forms of proximal processes and the results of the developmental outcomes are very much dependent upon the various characteristics of a *person* and his/her *context* (Bronfenbrenner, 2005; Tudge, Otero, Hogan, & Etz, 2003).

Regarding the *person*, Bronfenbrenner stated that personal characteristics have important roles in changing an individual's context. The roles can be passive or active. The passive roles are *demand* characteristics (such as age and gender), the more active roles are *resource* characteristics (such as intelligence and skills), and the most active roles are *force* characteristics (such as temperament and motivation) (Bronfenbrenner & Morris, 1998; Lerner, 2005; Tudge, Mokrova, Hatfield, & Karnik, 2009).

With regard to the *context* in which an individual lives, there are four interrelated ecological levels that are understood as *nested systems*. The proximal level, the *microsystem*, is the immediate environment in which the children live and spend much of their time in activities and interactions with other persons from their family, school, or peer group. The interrelations in the *microsystem* form the *mesosystem*. In the Acehnese post-tsunami context, these are the interactions between children, family and close neighbours in the community or village. The next level, the *exosystem*, consists of contexts that do not include the children and yet contribute to their well-being. In the post-tsunami context, the Indonesian President's policy of opening doors for international donor agencies to support Aceh recovery programs constitutes such an exosystem. The *macrosystem*, the super-ordinate level in the nested systems, includes culture, subculture, the extended social structure, and the public policy within which its members share beliefs, norms, rules, and values. This highest level of the system influences all other bio-ecological levels (Bronfenbrenner, 1979, 1994, 2005). Within the Acehnese post-tsunami community, culture and religion are important aspects of the macrosystem. The strong, extensive Acehnese kinship systems and Islamic beliefs and rituals may have been sources of strength in dealing with adversities after the tsunami (Tjhin, Guerrero, Kaligis, & Khamelia, 2010).

Time, or a *chronosystem*, plays an important role in the bio-ecological theory. Bronfenbrenner (1994) stated that *a chronosystem encompasses change or consistency over time not only in the characteristics of the person but also of the environment in which that person lives* (p. 40). Regarding the conditions of Acehese children before and after the tsunami, there were significant changes in the context or environment where the children lived and also in their personal level.

This study aims to understand the impact of the tsunami at the personal as well as environmental (microsystem to macrosystem) levels of the Acehese child participants of the study, to examine the children's patterns of adaptation, and to identify important aspects of the children's bio-ecological systems that seem to have influenced their resilience or vulnerability. This study also examined how the presence of risk and protective factors within their personal and environmental levels, including cultural traditions and religion (Islam), influenced the children's resilience as manifested in their patterns of adaptation.

The patterns of adaptation were identified by looking at the children's level of functioning before and one year after the tsunami, which includes their academic functioning, functioning at home, and functioning with peers. Traumatic grief reactions and (decreases in) levels of functioning immediately after the tsunami were also taken into account.

1.6 The Importance of this Study

There is a profound lack of research addressing the resilience and vulnerability of children following natural disasters that considers multi-level variables ranging from individual to larger social systems and networks, such as neighbourhoods and socio-cultural systems (Hoffman & Kruzcek, 2011; Masten & Obradovic, 2008). Most studies on the 2004 tsunami focused primarily on either post-traumatic stress reactions (PTSR) or post-traumatic stress disorder (PTSD) (see Catani, Jacob, Schauer, Kohila, & Neuner, 2008; Dyb, Jensen, & Nygaard, 2011; Neria, Nandi, & Galea, 2008; Neuner et al., 2006; Piyasil et al., 2007; Thienkrua et al., 2006; Tjhin, Guerrero, Kaligis, & Khamelia, 2010; Vijayakumar et al., 2006; Wickrama & Kaspar, 2007), but not on exploring the dynamics and processes of resilience.

The bio-ecological framework theory can give a comprehensive overview of how children experienced, faced, and responded to adverse circumstances after the tsunami in their interaction with their environment. In-depth study of multi-level systems as sources of resilience or vulnerability through an ethnographic approach and case studies in four villages impacted by the tsunami will give a more holistic perspective which may provide a valuable model for disaster responses that are intended to promote the resilience process in the wake of a disaster, especially in the first year after the disaster. This model may also lead to better future interventions for child survivors of natural disasters, by maximizing protective factors and minimizing risk factors (Leshner, 2002) within their personal and environmental levels.

1.7 Research Questions

The research questions of this study are:

1. What traumatic experiences did the children have during and immediately after the tsunami regarding the exposure to danger, family loss, and changes in the family structure and relationships?
2. What were the traumatic grief reactions of the children immediately after the tsunami, their point of recovery, and changes in their behaviour?
3. What were the post-tsunami physical and psychosocial conditions in the villages?
4. How did the kinship patterns in Aceh provide support and challenges for the children?
5. How did Islamic norms, beliefs, and values, and the religious practices in the Acehnese society influence Acehnese children in facing their daily lives following the tsunami?
6. What were the children's patterns of adaptation and their trauma symptoms one year after the tsunami?
7. How were the patterns of adaptation related to the risk and protective factors within the children's bio-ecological systems?

1.8 Research Design

In order to answer the research questions, this research employed a mixed-method study. The leading data were qualitatively gathered by ethnographic and case studies. This approach allowed the researcher to immerse herself in the field for a prolonged period of time to gain a comprehensive and complete picture of the cultural and social situation and obtain in-depth information from each participant in the study. The quantitative data were obtained by means of questionnaires and self-report test. This mixed-data approach helped the researcher to attain a holistic understanding of the personal situation as well as the context of the participants after the tsunami. This study was not intended to generalize findings, but more to understand the process and the interactions among internal and external factors of the children that lead to adaptive or maladaptive patterns.

1.9 The Structure of the Manuscript

In Chapter 2, a detailed overview of the theoretical framework used in this study is presented. Chapter 3 describes the mixed-methods approach used in the present study. We describe the ethnographic and case study procedures, the recruitment and involvement of participants, the qualitative and quantitative instruments used, the ethical considerations involved, the process of data collection, the credibility of the study, and the qualitative and quantitative analysis and interpretation.

The research questions are answered in Chapters 4 and 5. To answer the Research Questions 1 to 5, we describe in Chapter 4 the context of Acehnese children ethnographically, at the personal level and with regard to the children's microsystem (family and peers), mesosystem (community), and macrosystem (culture and religion).

Chapter 5 is devoted to Research Questions 6 and 7. This chapter describes the patterns of adaptation of the child participants after the tsunami, the children's traumatic symptoms one year after the tsunami, and how the children's patterns of adaptation are related to the risk and protective factors in their personal aspects and their ecological systems. Chapter 6 gives a discussion and summary of the findings, draws lessons learned, and presents intervention recommendations for future intervention planning for disaster responses, especially within the first year after a disaster.

Chapter 2

A Bio-Ecological Perspective on Acehnese Children's Resilience Following the Tsunami

2.1 The Tsunami and the Nature of a Mass Disaster

The tsunami that hit Aceh and other Asian and African regions in 2004 was a 'catastrophic disaster' and is considered one of the deadliest natural disasters in history. It had a disastrous impact on the lives of Acehnese children. No one could have predicted the extent of the destruction caused by the waves, which devastated everything, including the buildings where people hid.

The American Academy of Pediatrics - Work Group on Disasters (AAPWGD) (1995) defined a disaster as an event that involves the destruction of property, causes injury or loss of life, and affects a large population and many families. A disaster may also be referred to as a *mass disaster* because it affects large numbers of people and most likely disrupts entire communities (Webb, 2004). One has to be careful, however, to avoid making generalizations as a result of experiences people may have with disasters. Even if disastrous events seem very similar, they do not necessarily present the same challenges to the victims (Saylor, 1993). Webb (2004) emphasized the need to relate a mass disaster not only to the number of deaths, but also to the level of destruction, because the latter limits the possibilities for rescue and recovery. The lack of resources that often follows a mass disaster may seriously aggravate the ordeal for the surviving individuals.

According to Webb (2004), in order to evaluate a mass disaster situation, it is important to consider several variables, each of which may determine the nature of its potential impact on the survivors. These variables are:

1. The frequency of occurrence of the traumatic event, whether it happens once (as Type-1 trauma) or repeatedly (as Type-2 trauma);
2. The proximity and the extent of the survivors' exposure to the traumatic event, whether experienced on-site or first-hand, on the periphery or as witnesses (i.e. not directly experiencing the traumatic event, but emotionally or geographically involved), or conveyed by the media (exposure through factual reporting on TV);
3. The loss and destruction experienced by the survivors;
4. The attribution of causality, which refers to the final attribution of the cause of the event as believed by the survivors, e.g. whether it is a random event or an act of God, or a deliberate or man-made disaster.

The 2004 tsunami can be categorized as a type-2 trauma because the tsunami happened after an immense earthquake. Moreover, soon after the event there were repeated earthquakes and also frequent rainstorms that caused floods in some areas. Furthermore, unrelated to the earthquake and the

tsunami, there was still some evidence of gunfire between the GAM and the Indonesian Army. According to Webb (2004), recurring traumatic events (Type-2 traumas) may cause constant and prolonged fear.

Many of the survivors in Aceh experienced the tsunami on-site or first-hand. Thousands of people were in the water and many lost their lives. They were also first-hand witnesses of the massive devastation of the area. Large numbers of survivors had also witnessed the loss of their loved ones. A study by Pynoos and Nader (1989) has shown that children who are closest to traumatic events and/or who witness or experience personal injury caused by the events show the severest responses. Factors associated with exposure, particularly injury and the life-threatening nature of the experience, generally increase negative outcomes. The worse the exposure, the greater the likelihood that resilience is overwhelmed (Cubis, n.d.). The Acehnese had no certain explanation why the tsunami happened in their region and devastated their homes and lives. Those seeking an answer resorted to the spiritual belief that the tsunami was an act of God (Melalatoa, 2005).

2.2 Child Trauma Reactions Following a Mass Disaster

Mass disasters, either man-made or natural, affect children's well-being and influence their developmental trajectories. Many Acehnese children living in the devastated areas not only experienced the life-threatening situations directly, but they also lost the most basic necessities to live a normal life. Many lost important family members.

A mass disaster clearly qualifies as a traumatic event, which often leads to stress reactions from the survivors, including children (AAPWGD, 1995; Silverman & La Greca, 2002). A mass trauma is defined as a trauma resulting from a devastating disaster that threatens the lives of many people in a community at the same time. The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) specifies a trauma-inducing event as an event that is characterized by the following:

- (1) *The person experienced, witnessed, or was confronted with an event or events that involved or threatened death, or serious injury, or a threat to the physical integrity of self or others.*
- (2) *The person's response involved intense fear, helplessness, or horror. Note: in children, this may be expressed instead by disorganized or agitated behaviour* (American Psychiatric Association, 2000, p. 467).

In children, experiencing a mass disaster may lead to a moderate increase in psychological distress or even to symptoms of psychopathology; although not all child survivors will show maladaptive responses (Compass & Epping, 1993). As has been observed, if the death of a family member occurs during a disaster, the grieving process of the children is usually much more complicated. This is usually referred to as traumatic grief. Traumatic grief results from 'the loss of a loved one under traumatic circumstances' (Cohen, Mannarino, & Deblinger, 2006, p.5). The usual

grief responses of sadness are mixed with terrifying memories of the traumatic event and thus the depressive reactions usually co-occur with anxiety symptoms (Cohen, Mannarino, & Deblinger, 2006; Silverman & La Greca 2002; Webb, 2004). If the reaction is very strong, a child may be extremely preoccupied with the loss and may experience problems with concentrating at school or in other daily activities, and may show behaviour problems (Webb, 2004).

Zubenko (2002) stated that children's understanding of loss and death as well as their responses must be viewed in relation to their development. Children's limited capacity due to their level of development challenges their understanding and handling of their loss and grief. Children between 10 and 12 years start to fully grasp the notion that death is a permanent condition. However, these children can still feel very guilty and they often hope that they can somehow influence the situation by promising to become better children. Adolescents may have an adult view on death, but they are still not capable of handling the traumatic loss emotionally like an adult. The sadness and fright resulting from the death of loved ones can lead to a state of withdrawal or denial (Zubenko, 2002).

Following a disaster, caregivers and other adults involved often fail to recognize that children may have problems or intense traumatic reactions like adults. When children start playing and smiling again, people tend to think that their trauma reactions have disappeared. Children's trauma reactions are also easily overlooked and untreated because following disasters the adult family members are very often extremely busy themselves in their efforts to deal with the new situation. This will add to the negative experiences of children and make them feel confused, frightened, sad, neglected or angry (Zubenko, 2002).

The grieving and traumatic reactions of children may be stronger when they directly experience the devastation of their community. The damaged infrastructure and the destruction of the community affect family lives, for example family income and livelihood (Webb, 2004). This situation may subsequently influence the financial and psychological condition of family members, including children.

Losing family members, especially caregivers or siblings with whom the children have a close relationship, lessens the social support that can help the children to adapt (Cubis, n.d.). The impact of the traumatic events is also influenced by the psychological condition of current caregivers or the surviving parents. Since children are particularly sensitive to the emotional condition of their parents or the adults around them (Webb, 2004), especially their mother (Dyb, Jensen, & Nygaard, 2011; Fletcher, 1996), children's trauma reactions will be even worse when the surviving caregivers react emotionally, or experience distress or panic (Dyb, Jensen, & Nygaard, 2011; Zubenko, 2002). The responses of his or her parent(s) or caregiver(s) to the traumatic event may influence a child's perception of the trauma and cause traumatic symptoms later on. Children use trusted adults as a reference for assessing danger and attributing meaning to events. Children also depend on parents for protection (Pynoos et al., 1995). Observing parents distressed after a mass disaster may affect

children's subjective experiences, leaving them feeling even more overwhelmed (Dyb, Jensen, & Nygaard, 2011).

2.2.1 The Classification of Trauma Reactions

Many different trauma reactions or trauma symptoms following a disaster have been described in the literature: symptoms of depression, anxiety, anger, post-traumatic stress, and dissociations (Briere, 1996), withdrawal, poor concentration, and aggression (Carlson & Dalenberg, 2000; Webb, 2004). Many studies associate trauma reactions following a disaster with a post-traumatic stress disorder (PTSD) or an acute stress disorder (Arntson & Knudsen, 2004; Belter & Shannon, 1993; Catani, Jacob, Schauer, Kohila, & Neuner, 2008; Esser, 2002; Neria, Nandi, & Galea, 2008; Neuner et al., 2006; Silverman & La Greca, 2002; Shannon, Lonigan, Finch, & Taylor, 1994; Webb, 2004).

According to Levine and Kline (2007), universal symptoms of trauma experienced by humans are hyper-arousal, constriction, dissociation, and feelings of numbness and shutdown (or 'freeze'). These four symptoms often cause adults and children to feel helpless and hopeless. However, children usually show symptoms in different ways from adults because they are still developing in cognitive, biological, emotional, and social areas. Moreover, children are still dependent on and highly influenced by their adult caregivers (Levine & Kline, 2007).

When severe trauma reactions occur after a disaster, the most common clinical diagnosis is adjustment disorder or acute stress disorder (Silverman & La Greca, 2002). In DSM-IV-TR, the diagnosis of this disorder may be applied following exposure to an extreme traumatic event, if the symptoms meet the criteria of re-experiencing, avoidance or numbing, and increased arousal, and if they last for a minimum of two days and a maximum of four weeks. If the symptoms persist for more than a month and less than three months, it may be diagnosed as acute PTSD. When they persist for more than three months, the diagnosis of chronic PTSD may be applied (APA, 2000). It is not easy to clinically diagnose child victims of disasters, however, because it is unclear how the above-mentioned trauma disorders are manifested in these children due to lack of research in this area (Silverman & La Greca, 2002). Diagnosis is also complicated by the fact that symptoms from several different diagnostic clusters often co-occur and by the fact that trauma symptoms often do not manifest strongly enough to fully qualify for a certain diagnosis (Drake, Bush, & van Gorp, 2001).

According to the AAPWGD (1995), grieving after a disaster may last 6-12 months. When symptoms persist for a longer period of time or if the symptoms are excessive and hinder the capacity to bounce back to the pre-disaster level of functioning, children will need professional help. Zubenko (2002) emphasized that effects of a traumatic event on a child must be recognized and treated not only in a safe and non-judgmental way, but also in a developmentally appropriate way.

Briere (1996) classified children's trauma symptoms following traumatic events into five kinds of symptoms, namely: symptoms of anxiety, depression, anger, post-traumatic stress, and

dissociation. Anxiety symptoms are reflected in feelings such as generalized anxiety, hyper-arousal, and worry. In addition, specific fears (e.g., towards men, women, the dark, or being killed), episodes of free-floating anxiety, and a sense of impending danger are also included as anxiety symptoms. Depression symptoms are reflected in feelings of sadness, unhappiness, loneliness, episodes of tearfulness, and depressive cognitions such as guilt and self-blame. They are also manifested in self-injury. Anger symptoms are characterized by angry thoughts, feelings, and behaviours, including feeling angry and aggressive, and hating others. A child may also have difficulty in de-escalating anger, may want to shout at or hurt people, and may tend to argue and fight. Post-traumatic stress symptoms include having intrusive thoughts, sensations, and memories of painful past events, nightmares, fears, and cognitive avoidance of painful feelings. Dissociation symptoms include suffering derealisation, mind blanks and emotional numbness, pretending to be someone else or somewhere else, day-dreaming, having memory problems, and having dissociative avoidance reactions (Briere, 1996).

Apart from depressive reactions, there may also be an elevated level of anxiety following a disaster (Goenjian et al., 1995; Silverman & La Greca, 2002). Events such as rainstorms, repeated earthquakes, inundation, and thunder, may not only be traumatising in themselves, but may also lead to increased fear of further accidents (Silverman & La Greca, 2002) and becoming separated (again) from parents or loved ones.

2.3 Child Resilience after a Mass Disaster

Long before the study of resilience emerged four decades ago, studies of human behaviour tended to emphasize individual characteristics as sources of psychopathology. At that time, insights into the impacts on children or adolescents of adversities were gained from studies of individuals who failed at school, who suffered mental disturbances, or who were criminals instead of successful survivors. Such approaches could not explain certain phenomena found by the pioneers amongst resilience researchers, that children who encountered multiple adversities and were considered at risk of developing psychopathology, in fact showed positive adaptation (Goldstein & Brooks, 2006; Masten, 2001; Werner, 2005; Wright & Masten, 2006).

In the mid-1950s, Werner started her longitudinal study on Kauai children exposed to multiple risk factors such as poverty, perinatal trauma, parental psychopathology, and adverse child-rearing conditions, making it the first reported study on resiliency in children. Along with that study, more and more longitudinal studies in North America and Europe that followed “at-risk” children from childhood to adulthood, consistently found that only a small percentage of these children developed serious or persistent behaviour problems (Garmezy, 1983; Werner, 2005).

Over the past four decades, there have been four major waves of resilience research having different research goals. The first wave of study was descriptive: it identified individual

characteristics that differentiate children who show positive adaptation and those who do not in the face of serious adversities. The second wave of study focused on the processes that might help children to be resilient. The third wave of study emphasized an intervention plan within micro and macro levels in order to enhance human capacity to withstand hazardous life events. The fourth wave of study is now under way: it addresses the gene-environment interactions to provide us with a better understanding of the complex processes that lead to resilience (Masten & Wright, 2009). The present study builds upon the results of the first and second wave of resilience research.

The study of resilience during the first wave identified factors that contribute to individual resilience: it answered the “what” question. The earliest research indicated that successful adaptation is influenced by individuals’ personal traits and characteristics. These personal traits and characteristics were identified by looking at the differences between children who showed positive adaptation and those who did not in the context of adversities or multiple risks. Subsequently, it became apparent that factors outside the individual, such as family, community, and the larger socio-culture, can also influence a child’s resilience.

Even though the studies of the first wave were important for understanding, which basic factors might be involved in resilience, they did not provide an understanding of the *process* leading to a child’s resilience. The second wave of research tackled this problem and placed resilience in a broader context by using the ecological perspective to understand the reciprocal interactions among persons and their context (Wright & Masten, 2006). This meant that, within this wave of study, research and theory focused on the complex interactions in human development that might lead to pathologies or positive outcomes after encountering hazardous events in life (Cicchetti, 2003; Egeland, Carlson, & Sroufe, 1993; Yates, Egeland, & Sroufe, 2003). Thus, many studies emphasized the relationships and systems within a family. Some also looked at the interrelated roles of biological, social, and cultural processes to understand how they lead to resilience (Masten & Obradovic, 2008; Wright & Masten, 2006).

Many studies within this second wave of research used the ecological framework to explain that a child’s resilience is not only influenced by one or two variables, but is a rather complex process involving reciprocal interactions encompassing the role of individuals, their immediate social environment, and the wider social context. This study identifies factors within the children’s personal and ecological systems, including cultural traditions and religion (Islam) that influenced their resilience as manifested in their patterns of adaptation. The bio-ecological framework can give a comprehensive overview on the children’s interactions with their environment to give a more holistic perspective on the resilience process after a disaster. This model may help to promote future interventions addressing important factors within personal and ecological systems following a disaster.

2.3.1 Defining Resilience in Children Following a Disaster

Masten and her colleagues defined resilience as “a pattern of positive adaptation in the context of past or present adversity” (Riley & Masten, 2005, p. 13; Wright & Masten, 2006, p. 18). Resilience is associated with successful adaptation when dealing with hazards and risks and it is manifested in good outcomes regardless of a highly stressful situation. Several different criteria are used to identify or define positive adaptation, such as the absence of pathology, successfulness in an age-salient developmental task, or subjective well being.

In the early development of resilience theory, there was some controversy over the question of how to define resilience and/or positive adaptation in the face of adversity (Luthar, Cicchetti, & Becker, 2000; Wright & Masten, 2006). Researchers were confused by the fact that some children seemed to perform well in school and in their relationships with others, but nevertheless showed symptoms of distress, such as sadness and depression. In order to address such issues, Wright and Masten (2006) suggested that the presence of traumatic symptoms after traumatic experience is acceptable as long as the traumatic symptoms are not pathological. Other debates were about the kind of domains that should be addressed in regard to resilience and about the exact time to assess the outcomes of development (Wright & Masten, 2006). These controversies are still the focus of many Indonesian scholars' discussions, as there is still no general agreement on how to define, judge, and measure resilience within the context of Indonesia. Moreover, in Indonesia the study of child resilience is still in its initial phase (discussion at the International Conference on Psychology of Resilience in Indonesia, October 2011).

Wright and Masten (2006) suggested that the criteria for positive adaptation should be within age-salient developmental tasks and must be related to the immediate environment in which a child is living. To come up with appropriate criteria for signalling resilience, many developmental researchers have focused on competence in developmental tasks. Developmental tasks are behavioural achievements children are expected to engage in and accomplish during particular periods of development. As the developmental tasks change according to the period of development, criteria of adaptation can also change across the life-span (Masten & Obradovic, 2008). After a massive trauma, resilience is also represented by good recovery after the traumatic events are over (Wright, Masten, Northwood, & Hubbard, 1997).

In the present study, we determined the resilience of the children on the basis of their pattern of adaptation. There are various adaptation patterns after a mass disaster. Masten and Obradovic (2008) illustrated adaptive and maladaptive patterns in relation to the acute onset of a disaster (see Figure 1).

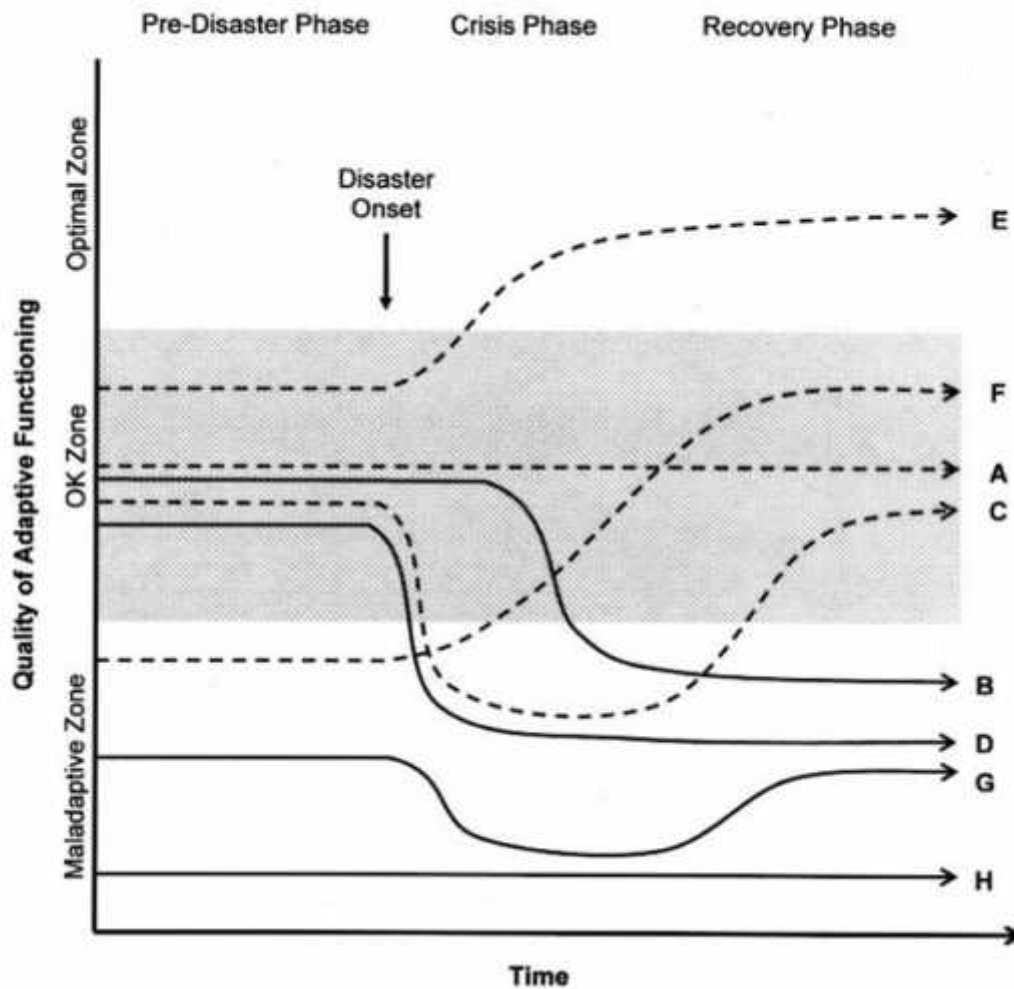


Figure 1. Adaptive and maladaptive patterns of adaptation as observed by Masten and Obradovic (2008).

When a person continues to function well during a crisis, his/her adaptation pattern reflects (stress) *resistance* (A). According to Masten & Wright (2009), *resistance* refers to “patterns of reasonably steady and positive adaptive behaviour in the presence of significant threats”. *Recovery* (C) is reflected in the situation where there is a decline in the individual’s adaptive functioning because of the acute adversity, but then followed by a return to the previous positive level or previous adaptive functioning as the crisis abates. *Positive transformation patterns* (E and F) are reflected in situations when a person has an improved level of functioning in response to a crisis and its aftermath, with the starting point of functioning either in a high or lower level of adaptive functioning before the crisis. This is similar to the concept of post-traumatic growth among traumatized adults. All these patterns (A, C, E, and F) indicate resilience patterns because of the relatively positive outcome after a crisis (Masten & Obradovic, 2008).

Other patterns shown in the Figure 1 (B, D, G, and H) indicate vulnerable patterns. When resistance is followed by a breakdown in functioning, this is called a *delayed breakdown* (B). There is

also a possibility that a child has a *breakdown without recovery* (D) in functioning. A *negative transformation* or a *persistent maladaptive pattern* (G and H) occurs in a situation in which the individual has already functioned poorly and the crisis makes it worse. Recovery might happen but the overall level of functioning is still low. Another possibility is that the poor level of functioning remains the same before, during, and after the crisis, perhaps because of a *floor effect* (Masten & Obradovic, 2008).

According to Masten and Obradovic (2008), there are many other patterns of adaptation possible in response to the acute onset of a disaster. As they both stated, an “individual could follow a much more complex pattern related to fluctuations in his or her capacity for resilience and the nature of the on-going adversity exposure” (p.9). Their list of patterns of adaptation should therefore not be taken as an exhaustive list of all possible patterns.

To study patterns of adaptation we needed data about the children's functioning before the tsunami, immediately after the tsunami, and one year after the tsunami. With regard to the children's functioning before and one year after the tsunami we assessed their academic functioning, family functioning, and functioning in their relationship with peers. We also assessed their traumatic grief reactions and decrease in their level of functioning immediately after the tsunami.

2.3.2 Risk and Protective Factors in Child Resilience

Studies focusing on resilience after a disaster usually consider positive as well as negative patterns of adaptation after the disaster and try to find factors or conditions that seem to either protect or prohibit good functioning during the crisis or the recovery phase afterwards (Masten & Osofsky, 2010). Child resilience is influenced to a great extent by the risk and protective factors involved. Risk factors are characteristics of individuals or their situation that may inhibit normal development and predict higher rates of negative or undesirable behavioural outcomes (Cumming, Davies, & Campbell, 2000; Riley & Masten, 2005; Seidman & Pedersen, 2003; Wright & Masten, 2006). Protective factors are qualities of a person or context that may act as a buffer and can induce better outcomes in the event of trauma, crisis, or other forms of adversity (Mohr, 2002; Riley & Masten, 2005; Werner, 2005; Wright & Masten, 2006).

Researchers have found some risk factors arising from personal characteristics in the form of maladaptive coping style (NCTSN & NCPTSD, 2005), personal characteristics that relate to gender (Werner, 2005), and difficult temperament or predisposition of children (Rutter, 1990; Mohr, 2002). Risk factors at the microsystem level can be present in the form of poor parent-child relationships (Mohr, 2002; Owens & Shaw, 2003; Rutter, 1990), maltreatment or abusive parental behaviour, parental psychopathology, and family trauma (Agaibi & Wilson, 2005; Masten & Wright, 2009; Radke-Yarrow & Sherman, 1990; Sameroff & Seifer, 1990; Werner, 2005). Risk factors at a more distal level can be present in the form of exposure to community violence (Mohr, 2002), chaotic

environment (Agaibi & Wilson, 2005), and poverty (Felner, 2006; Owen & Shaw, 2003; Werner, 2005).

Protective factors at the personal level include a social and adaptable temperament, good cognitive abilities (especially intelligence or problem-solving skills) (Rutter, 1990; Wright & Masten, 2006), a positive outlook on life, a sense of humour, and attractiveness (Wright & Masten, 2006). At the environmental level, they include secure-attachment relationships, a stable and supportive home environment, parental involvement in the child's education, and the family's faith and religious activities (Rutter, 1990; Wright & Masten, 2006). In a more distal environment, protective factors can be present in the form of a safe and supportive neighbourhood, a low level of community violence, and good relations with caring adult mentors and pro-social peers (Riley & Masten, 2005; Werner, 2005; Wright & Masten, 2006), availability of resources for education, low acceptance of physical violence, a protective child policy, and cultural traditions (Masten & Wright, 2009).

Multiple settings and systems must be observed simultaneously because risk factors tend to cluster in the same individuals (Bronfenbrenner, 1979, 1994). It usually is not a single risk factor that causes behavioural problems or difficulties (Sameroff, Gutman, & Peck, 2003). Individuals are rarely confronted with only a single risk factor. Masten and Powell (2003) argued that the presence of a risk usually means the presence of other related risks. For example, living in poverty means that people have to endure bad housing, cannot afford decent health care, and have unhealthy diets. In other words, risks usually co-occur with other risks. This means that an individual quite often has to face multiple and probably cumulative risks at a given time. A large number of cumulative risk factors lead to mental health problems, behavioural disorders, or psychiatric disorders (Rutter, 1985) in children and adolescents. The more risk factors, the more behavioural problems the children had. Therefore, while investigating child development and resilience in the context of traumatic events, we should look into the impact of more than one risk factor (Sameroff, Gutman, & Peck, 2003).

Likewise, protective factors that help the individuals to adapt well when facing high levels of risk or adversity also tend to cluster. Cumulative risk and protective factors in the bio-ecological systems of the child reflect the resources of the children in dealing with hazardous life events (Sameroff, Gutman, & Peck, 2003). Therefore, we did not only study the influence of each risk and protective factor separately, but also the influence of the total number of risk factors and the total number of protective factors on the patterns of adaptation.

2.4 Bio-Ecological Theory and Resilience Processes in the Context of Aceh after the Tsunami

Bronfenbrenner's bio-ecological theory highlights the interrelation of an active person and an active context in influencing human development. This theory provides an important and relevant contribution to the study of massive trauma impact and adaptation, because massive traumas usually

affect almost all members of a community and the environment in general. Unfortunately, many studies of mass trauma found in the literature focus on individual aspects such as stress or Post Traumatic Stress Reactions (PTSR) or are limited to the study of family disruption (Hoffman & Kruczek, 2011).

The essence of Bronfenbrenner's theory is the *Process – Person – Context – Time (PPCT)* model that will be described in the following paragraphs.

2.4.1 Process

Bronfenbrenner emphasises the proximal processes as the key factor in development (Bronfenbrenner, 2005; Bronfenbrenner & Morris, 1998). Regarding the process as fundamental to the theory, Bronfenbrenner made two central propositions to describe the proximal process. The first proposition is:

“... human development takes place through processes of progressively more complex reciprocal interaction between an active, evolving bio-psychological human organism and the persons, objects, and symbols in its immediate external environment. To be effective, the interaction must occur on a fairly regular basis over extended periods of time. Such enduring forms of interaction in the immediate environment are referred to as proximal processes...” (Bronfenbrenner & Morris, 1998, p. 797).

An example of enduring forms of proximal processes between a child and his or her immediate settings is when an infant is breastfed by his or her mother. Another example is when a child starts learning a new skill in terms of development like walking, learning how to play with other children, solving problems, reading, etc.

For children, their daily interactions with their caregiver and significant others are very important, and such reciprocal interactions play a major role in the process of development. Reciprocal interactions improve skills, motivation, and knowledge.

The nature of proximal processes, however, varies according to aspects of the individual and of the context (Bronfenbrenner & Morris, 1998). As Bronfenbrenner explained in the second of the two central propositions:

“The form, power, content, and direction of the proximal processes affecting development vary systematically as a joint function of the characteristics of the developing person, the environment—both immediate and more remote—in which the processes are taking place, the nature of the developmental outcomes under consideration, and the social continuities and changes occurring over time through the life course and the historical period during which the person has lived” (Bronfenbrenner & Morris, 1998, p. 798).

According to Bronfenbrenner, proximal processes are essential to the development of children. Considering that the nature of the proximal processes much depend on the characteristics and conditions of the person and his/her circumstances, it is very important to know which aspects of the person and context have to be considered in this study.

2.4.2 Person

Bronfenbrenner distinguished three types of personal characteristics: *demand* (e.g., age, sex), *resource* (e.g., intelligence, skills), and *force* characteristics (e.g., temperament, motivation). All of these together constitute powerful influences on the nature of the proximal process (Lerner, 2005; Tudge, Mokrova, Hatfield, & Karnik, 2009). Demand characteristics consist of age, sex, skin colour, and physical appearance that can immediately stimulate others' reactions and expectations towards individuals. Thereby, the interaction patterns of initial (and ongoing) relationships are affected by the outside appearance of the individual. Here, individuals are relatively passive in forging relationships with their immediate settings.

Unlike demand characteristics, resource characteristics do not appear directly, because they are associated with mental and emotional resources that are drawn from life experience, knowledge, and skills that enable the individual to function effectively. Examples of resource characteristics are intelligence, coping skills, and pro-social behaviour that lead individuals to play a more active role in influencing the response of other parties as well as in responding to what happens in their environment.

The last characteristics, force characteristics such as temperament, motivation, and persistence, are regarded as internal resources that play the most active role. The nature of these characteristics can change and affect how others behave toward individuals and vice versa, and thus influences the interaction between individuals and their environment (Tudge, Mokrova, Hatfield, & Karnik, 2009).

We studied the three domains of personal characteristics i.e. demand, resource, and force characteristics. Regarding the demand characteristics, we examined the influence of gender. With regard to the resource characteristics, we focused on the role of coping style. Concerning the force characteristics, we considered the positive and negative characteristics related to the children's predisposition or nature before the tsunami.

Gender

Studies on the relation between gender and resilience in children of non-Asian communities have not been able to demonstrate consistent findings, although many studies have reported that, in general, girls develop more severe trauma symptoms than boys (Norris et al., 2002 in Dyb, Jensen, & Nygaard, 2011). However, Rutter (1985) mentioned that typical characteristics of boys may put them at greater risk of social punishment than girls (Pianta, Egeland, & Sroufe, 1990; Rutter, 1985). The possible reason is that girls, as compared to boys, tend to cope more effectively in the face of adversity. Girls also rely more frequently on informal support sources so that they can recover sooner and more often than boys (Werner, 2005). In keeping with this, Flores, Cicchetti, and Rogosh (2005) found in their study of maltreated and non-maltreated Latino children that being female was associated with higher adaptive functioning.

In Aceh, boys do not tend to be burdened by household chores, while girls are. After reaching puberty, parenting of boys is mostly done by outsiders because from that age onwards boys spend more time out of the house and usually sleep in the *meunasah* or mosque (Melalatoa, 2005). In this study, we examined whether gender is related to the children's pattern of adaptation.

Coping

Coping refers to 'the manner in which people deal with stress' (Webb, 2004, p.30). Coping style can be effective or ineffective, adaptive or maladaptive, healthy or unhealthy. According to the National Child Traumatic Stress Network and the National Centre for PTSD (NCTSN & NCPTSD, 2005), positive or adaptive coping styles are "those that help to reduce anxiety, lessen other distressing reactions, and improve the situation" (p.39). Coping behaviours that help survivors to adapt constructively after a disaster are religious coping, talking with others for support, being involved in positive distracting activities (such as sports or other hobbies), trying to maintain normal activities as much as possible, involvement in pleasant activities, spending time with others, participating in a support group, and seeking counselling. Negative coping styles are those that tend to raise or continue problems. Examples of negative coping behaviours include using alcohol or drugs, withdrawing from activities, family, or friends, easily becoming angry or being violent, watching too much television or playing computer games excessively, doing risky or dangerous things, and not taking care of oneself properly (NCTSN & NCPTSD, 2005).

We focused on two ways of coping, i.e. religious coping and active participation in psychosocial activities. Religious coping is reflected in religious behaviour, attitudes or thoughts when someone faces difficult life events (Pargament, Smith, Koenig, & Perez, 1998). Pargament et al. defined positive religious coping as behaviour, attitudes, and thoughts that reflect a secure and trusting relationship with God. Examples of positive religious coping include praying, seeking help from or talking with a spiritual leader, or being active in religious communities or activities. Pargament et al. (1998) mentioned that positive religious coping may help people to understand and deal with life stressors. Ai, Peterson, and Huang (2003) also supported the idea that coping with adverse life conditions by means of a faith and belief system can lead to successful adaptation. Religious coping can be a source of peace and comfort, and sometimes gives answers to people's doubts regarding an event and its impact on their life. Interpreting God's intention behind an event is also a form of religious coping (Smith, Pargament, Brant, & Oliver, 2000). Pargament et al. (1998) found that positive religious coping leads to less psychological stress and a better relationship with God and human beings. In this study, we examined whether there are significant differences in the patterns of adaptation between children who used religious coping and those who did not.

The various kinds of activities provided by psychosocial institutions after the tsunami were potentially protective in different ways. The involvement of children in many kinds of social activities developed by formal or informal aid institutions may help in providing personal and social benefits

and can enhance the adaptive capacity of individuals in dealing with adversities (Cove, Eiseman, & Popkin, 2005; Masten & Coatsworth, 1998; Masten & Wright, 2009). Participation in such social activities may improve children's social skills and may also protect children from exposure to other negative influences, such as violence or gang activities (Cove, Eiseman, & Popkin, 2005).

The study by Tiet, Huizinga, and Byrness (2010) found that children's involvement in extracurricular activities predicted their resilience because these activities gave opportunities for children to practice social skills, learn pro-social behaviour under adults' supervision, develop a sense of belonging towards their own group, and strengthen social networks. In this study, we analysed whether there are significant differences in the pattern of adaptation between children who actively participated in psychosocial programs and those who did not.

Individuals' Positive and Negative Characteristics

According to Bronfenbrenner, individuals' characteristics are important factors that contribute to the way in which children deal with stress and interact with their environment (Bronfenbrenner & Morris, 1998). Many researchers have found that positive individual characteristics may act as sources of resilience. Examples of these positive characteristics are a good sense of humour, an easy temperament and a good-natured disposition (Rutter, 1985), social orientation and responsiveness to people (Cove, Eiseman, & Popkin, 2005), being sociable, having self-confidence, self-efficacy or high self-esteem, and characteristics valued by society such as talent and attractiveness (Masten & Coatsworth, 1998; Werner, 2005; Wright & Masten, 2006).

Bronfenbrenner and Morris (1998) mentioned that characteristics that are developmentally disruptive are impulsiveness, explosiveness, distractibility, and inability to defer gratification. In a similar vein, Rutter (1985) suggested that negative characteristics of individuals that may disturb the developmental processes are hostility towards others and having a difficult temperament, such as easily becoming angry and irritated. These characteristics reflect individuals' difficulties in maintaining control over emotions and behaviour. In this study, we examined whether positive and negative characteristics of the children are related to their pattern of adaptation.

2.4.3 Context

According to Bronfenbrenner's theory, the environmental context of the children consists of four interrelated ecological levels (microsystem, mesosystem, exosystem, and macrosystem) that are understood as nested systems, each inside the other like a set of Russian dolls. These nested systems form the social context of the interactions between children and their environment. This context helps outsiders to understand how and why children react and adapt to their daily life events as they do (Hoffman & Kruzcek, 2011). Mass disaster is a type of life event that can also be understood using a bio-ecological model. The key to this theory is the interaction within a system and also between different layers of systems. The closest system influences the child in a more direct way, but the

furthermost systems also have an important influence on his or her development (Bronfenbrenner, 1994).

Microsystems

The microsystem consists of the immediate environment where children spend most of their time, engaging in activities and interaction. It includes home, peer group, school, and any other aspects of the environment in which children spend much of their time building interpersonal relations, learning about social roles, and learning how to live and understand the world and make sense of it (Bronfenbrenner, 1994, 2005; Tudge, Mokrova, Hatfield, & Karnik, 2009). The relationships in the family are one of the most important microsystems, especially the parent-child relationship, because the interactions among them build up a sense of mutuality, as a base to develop trust and security (Swick & Williams, 2006). As Bronfenbrenner (2005) stated in one of his propositions, “[t]he establishment of a strong mutual emotional attachment leads to *internalization* of parents’ activities and expressed feelings of affection. Such mutual ties, in turn, motivate the child’s interest and engagement in related activities [...] that invite exploration, manipulation, elaboration, and imagination” (p.9). In this study, the researcher focused on the most important aspects of the microsystems for children: family and peer relationships.

Family

Families are not only responsible for providing a child’s basic needs (food, water, shelter, etc), but through their routines, rituals, beliefs, bonding relationships, and values, they also play a significant role in helping the child to build a sense of self-regulation and a mechanism to protect him or herself. For example, children may learn from their family protective skills such as being vigilant towards strangers and learning to accept and cope with the new challenges in the present living arrangement (Masten & Wright, 2009).

When children experience a mass disaster, they prefer to stay with their family, above all. Under perceived threat, humans and other social species in attachment relationships will seek proximity to each other for comfort and protection (Masten & Wright, 2009). A family can provide a sense of security and safety when family members are together during and after a mass disaster. Families, especially parents or caregivers, have a significant role to play in protecting children from threats, including disasters, and in helping children to develop an adaptive mechanism in dealing with challenges. They protect the child and give guidance to the child’s social and emotional development (Sheridan, Eagle, & Dowd, 2006). Agaibi and Wilson (2005) highlight the role of good parenting in the development of a child’s cognitive skills and the enhancement of a child’s coping skills in facing different stressors. Studies by Masten (Masten & Coatsworth, 1998; Wright & Masten, 2006) have identified a number of protective characteristics in a family such as a warm and responsive caregiver, authoritative parenting behaviour, and parental involvement in a child’s education.

In the context of Aceh, the family has special characteristics. Men and women have separate responsibilities in which the father is the head of the family and the breadwinner or *mitapeng* (money maker) and focuses on external matters (outside the home). The mother's main responsibility is to manage the household, usually called *peuso'om breuh*, which literally means 'cooking rice', and includes looking after the education of the children. As the breadwinner, the father often needs to leave the house or go out of the village for days or weeks, or even longer. Therefore, the mother is usually in full charge of the daily care of the children. The father's role at home is to supervise his wife's management of the household and his children's education (Satriani, 2008). Regarding the children, Islam views them as having a very important role in the future and therefore parents need to attend closely to their children's education (Jannah, 2007). Education here does not only mean the usual types of education, such as learning how to read and write and calculate, but also, and especially, education in Islam. Islamic education is highly valued and emphasized in Aceh, and is conducted in formal and informal ways, sometimes at the expense of other types of education.

Following a mass disaster, the situation of a family may present serious threats or risks to children. This is because many changes happen after a mass disaster, especially stressors and adversities suffered by family members such as the loss of loved ones, materials, and financial resources. These situations may put the surviving caregivers or parents in stressful circumstances and may reduce their capacity to protect their children (Cubis, n.d.). The effect of losing partners or other family members because of a mass disaster is significant for adults. The loss of materials and loved ones as an impact of a mass disaster causes greatly increased stress for parents and other adults in the family. It sometimes leads to parental depression (Hoffman & Kruzcek, 2011). Changes in the family structure may challenge children to cope with the absence of a parent or secure figures in their lives. Children may also have to adjust to new roles and responsibilities (Hoffman & Kruzcek, 2011). Other potential challenges for children are family risk factors such as violence or substance abuse (Hoffman & Kruzcek, 2011).

Since the interactions between children and their parents are reciprocal, parental distress after traumatic events may influence children's traumatic reactions and vice versa (Dyb, Jensen, & Nygaard, 2011). Children are particularly sensitive to the emotional condition of their parents or the adults around them (Dyb, Jensen, & Nygaard, 2011; Fletcher, 1996; Webb, 2004), and children's trauma reactions become even worse when the surviving caregivers react emotionally, panic, or show distress (Dyb, Jensen, & Nygaard, 2011; Zubenko, 2002). This situation increases the likelihood of parents' reacting negatively to their circumstances, especially in their behaviour towards children, in the form of domestic violence, abusive relationships, and neglect (Masten & Wright, 2009; Riley & Masten, 2005). In this study, we examined whether family risk and protective factors that were represented in the form of family support and family threat are related to the children's pattern of adaptation.

Peers

As children grow older, the secure-base functions of attachment include more people, and the balance shifts from caregivers to peers. For children age 10-15 years old, peers play an important role in their social and emotional development. Peer attachment relationships are characterized by a more equal balance in the protected-protector roles compared with those in a parent-child relationship (Masten & Wright, 2009).

Therefore, after surviving a natural disaster, opportunities to meet and play with friends can help children release their feelings of sadness, anger and anxiety. Support from good friends during bad times and the availability of a close friend who provides comfort for children are key protective factors in building resiliency in children and adolescents (Arntson & Knudsen, 2004). Wilson and Agaibi (2005) mentioned that resilient children tended to try to be the same as or similar to their competent peers, and therefore, when peers are competent and can stimulate children to learn many good skills, children will gain more benefit.

However, playing and being involved in a group of friends are not always protective factors. When relationships are characterized by violence and other problematic behaviour, involvement in such a group can spread fear and stimulate negative behaviour among its members. A gang or a group of peers containing delinquent people may disturb the adaptive system of the members of the group (Masten & Wright, 2009). A study by Tiet, Huizinga, and Byrnes (2010) on youths in the inner city in Denver revealed that involvement with delinquent peers was a risk factor for adjustment. In this study, we analysed whether these positive and negative peer factors are related to the children's pattern of adaptation.

Mesosystems

The interrelations in the microsystems form the mesosystem. Since children spend time in more than one immediate setting, the interrelations among different settings will influence children's experiences (Bronfenbrenner, 1994, 2005). For example, parents' connections with the teachers of their child will influence how each of them relates to and 'handles' the child. The situation of neighbourhoods in Aceh after the tsunami was a very good example of mesosystems. After the tsunami, the Indonesian government built barracks for the survivors. People lived in barracks, where there was no distance between the rooms accommodating different families. The interrelations among children, parents, peers of the children, and close neighbours were very strong and they were linked to each other almost continuously.

Mesosystems allow a child to have wider relationships beyond the dyad relations such as a parent-child relation. Mesosystems connect the child with others in the community. This reduces the possibility of a family or a child being isolated from the community. Without strong mesosystems, families are more vulnerable to certain problems, such as unnoticed child abuse or domestic violence (Swick & Williams, 2006). Characteristics of neighbourhoods that provide support and protection for

children after a natural disaster are the ability of a community to establish a secure and safe environment for children, to generate cooperation, cohesiveness, and shared goals for the children, and to avoid and eliminate violence, discrimination and stigmatization of vulnerable members, such as children with a minority status and children with disabilities (Masten & Wright, 2009). When a neighbourhood community is infested by hatred, violence, stigma and discrimination, children will be at serious risk of being victimized by their own community (Masten & Wright, 2009). In this study, we focused on the roles of neighbours as the mesosystems. We also investigated children's relationships with an adult mentor in the community.

Kinship and Neighbourhoods' Relationships in the Acehese Gampongs

One of the strongest traditions in Aceh is the kinship system. The kinship system in Aceh is strong and extensive. The extended family includes a number of individuals who are considered as part of the family because of the bonds of marriage, from the lineage of both husband and wife.

The Acehese have a special term for their extended families, i.e *wali* and *karong*. *Wali* are men of the paternal line and *karong* are men and women from the maternal line. According to the Islamic view, *wali* have a higher status than *karong*, especially with respect to their position to receive an inheritance and as a representative of the family at weddings. Basically, Acehese follow a patriarchal system at the administrative level, but a matriarchal system regarding their after-marriage placement. This means that, after marriage, the husband will normally settle in the neighbourhood of his wife's relatives. Both of them will usually stay in her parents' house until a certain time, then move to another house next to the wife's nuclear family. Due to this matriarchal marriage tradition, it is understandable that in one *gampong* there are many extended families of the mother's bloodline and that a neighbourhood in Aceh was originally a community whose members had close kinship (Melalatoa, 2005; Reid, 2006; Satriani, 2008).

Over time, the relations among neighbours and extended family changed. The prolonged armed conflict and the changes in community structure during the New Order period eroded the *gotong royong* spirit. In many villages, despite the bond of brotherhood, there was often mutual suspicion and distrust among members of the community (Irwanto & Nurpatria, 2007). In some areas not severely affected by the conflict, the impact of the conflict was reflected in the tendency of the community members to make matters of personal safety and security highest priority, instead of focusing on the well-being of others in the community. To make it worse, after the tsunami, the enormous aid from international and national aid institutions made people in the *gampongs* start thinking of their own interests, which consequently diminished the spirit of *gotong royong* as an Acehese characteristic (Melalatoa, 2005; Satriani, 2008).

As with the common fact that neighbourhoods in Aceh consist of extended families, this has the potential to provide children with expanded social support, but also the potential to threaten

children in the form of stigmatization or labelling. In this study, we analysed whether these positive and negative neighbourhoods' relationships are related to the children's pattern of adaptation.

Supportive Relationship with Adult Mentors

Many researchers found that when parental figures cannot provide protection for children, having a secure and supportive relationship with at least one adult mentor, teacher, or another pro-social person outside the family is protective for children (Cove, Eiseman, & Popkin, 2005; Masten & Coatsworth, 1998; Riley & Masten, 2005; Rutter, 1985). Adult mentors provide an alternative bonding relationship for children, and having such an additional attachment relation may play a key role in helping children to deal with adversities (Riley & Masten, 2005). Moreover, positive experiences with adult mentors may enhance self-esteem and self-efficacy (Rutter, 1985). In this study, we analysed whether a supportive relationship with an adult mentor is related to the children's pattern of adaptation.

Exosystems

The exosystem comprises the linkages and processes between two or more settings, in which at least one setting does not include the child, but still influences the child's immediate environment and contributes to the child's well-being. A very common example of the exosystem is a parent's workplace (Bronfenbrenner, 1994, 2005). The child is not present at a parent's workplace, but what happens in the workplace influences all members of the family. When the systems in the parents' workplace were devastated after the tsunami, a great number of parents could not work as before or became jobless. Many parents tried to earn money by doing any available job even though it might require more time and energy, and this situation led to a significant decrease in the time the parents spend with family members and/or reduced their attention to their children. Other examples of exosystems are religious institutions and welfare services in the community (Dodor, Sira, & Hausafus, 2010). The important role of the exosystem is that, even though the child is not involved directly in the setting, what happens in the exosystem affects the child's immediate environment directly and the child indirectly (Bronfenbrenner, 2005; Swick & Williams, 2006).

Non-government Organizations' Role in the Acehese Gampongs

Prior to the tsunami, only limited numbers of non-governmental organizations were allowed to implement their programs in Aceh. This was due to the policy of the government at both national and provincial levels and was meant to prevent international interventions in its conflicts. Therefore, the Acehese had only very limited interaction with people from outside Aceh.

Consequently, many people in Aceh were totally unprepared for the hundreds of national and international donor and aid institutions that arrived to help. Various kinds of aid in the form of technical and financial assistance were given to Aceh (Waspo et al., 2007). Water and sanitation, distribution of essentials, medical assistance, housing and livelihood programs, infrastructure

rebuilding, and psychosocial programs were provided by various NGOs, the United Nations, and government organizations. Even though all help was greatly needed and very important for the recovery process, the implementation may not have always suited the culture, and may have had negative consequences for Aceh. For this reason the sudden influx of aid organisations has even been called the ‘second wave of the tsunami’ (Irwanto, 2005). One of the risks was the arrival of thousands of volunteers in Aceh, which had the potential to prevent the Acehnese from rebuilding their own life and community.

Data released by the Media Centre in Aceh showed that until the end of 2005, 326 international NGOs and 225 national NGOs were involved in recovery efforts in Aceh after the earthquake and the tsunami (Waspo et al., 2007). The Aceh Media Centre also revealed that the donations of 186 national and international organizations to help Aceh recover amounted to 22 trillion IDR (\pm 24 million USD). The Indonesian State Budget (APBN) was allocated through the Aceh Reconstruction and Rehabilitation Agency (BRR), which reached 3.97 trillion IDR (\pm 4 million USD). Large amounts from the above funds were used for purposes such as the reconstruction and rehabilitation of housing and infrastructure, economic and social development, and the financing of governance (Waspo et al., 2007). In this study we assessed the involvement of the psychosocial aid institutions in the community.

Macrosystem

The *macrosystem*, the outermost ring of the ecological environment, encompasses any groups, including culture, subculture, and the extended social structure, within which members share beliefs, norms, rules, values, and lifestyles. Ideology and lifestyles are shared through practices of socialization in the family as well as in larger subgroups to which they belong, such as groups of the same religion or ethnicity. As a result, within a particular social group, for example in Acehnese *gampongs* or villages, the structure and substance of micro-, meso-, and exosystems tend to be similar, as if they were constructed from the same master model (Bronfenbrenner, 2005), because they have the same religious beliefs, norms, and values (i.e. Islam), and they are from the same ethnicity (i.e. Acehnese).

We cannot discuss Aceh without discussing Islam because of its strong influence on the Acehnese culture. Its strong influence is evident in the various elements of the Acehnese culture, such as in the legal, social and educational systems, and it also penetrates economic development, arts, and other spheres (Djamal, 2007; Hadi, 2010; Melalatoa, 2005; Satriani, 2008). Cultures and religions develop and transmit many beliefs and practices that help people deal with hazardous life events. The culture may contribute to survival through the rituals for loss and mourning, prayers, and meditation strategies. In addition, culture can also facilitate or provide direct assistance to those in need (Masten & Wright, 2009).

In addition to Islam, one of the important backgrounds that should be described when we talk about Aceh is the history of armed conflict. Even though the participants of the study did not experience massive terror and crossfire because they were not in an area severely impacted by the armed conflict, the long history of conflict is a significant part of the Acehnese macrosystem, even in their region.

Prolonged Armed Conflicts and the Peace Agreement

Since the 16th century, Aceh had experienced long wars and armed conflicts almost continuously. They were mainly with the Netherlands (1873-1903) and Japan (1942-1945), but after the declaration of Indonesian independence there were also periods of armed conflict with the government of the Republic of Indonesia. The wars occurred during Soekarno's, Soeharto's, and Megawati's leadership between 1953 and 2004 (Kawilarang, 2008; Reid, 2005).

In 1976, Hasan Tiro, the leader of the Free Aceh Movement, announced the formation of the Free Aceh Movement (GAM, *Gerakan Aceh Merdeka*). The formation of this movement was mainly inspired by continuous disappointment concerning the economic and political exploitation of Aceh, which was used as a production base for the national economy without benefiting economically and politically. The formation of the GAM aimed at gaining independence from the government of Indonesia, so that the Acehnese people would be able to manage their own natural resources and rule Aceh as an independent state. Jakarta rejected this idea and sent the army, the TNI (*Tentara Nasional Indonesia*), to suppress the movement. The conflict between the GAM and the TNI lasted for almost 30 years (Aspinall, 2006; Cahyono, 2008; Kawilarang, 2008; Melalatoa, 2005; Reid, 2006; Sulaiman, 2006).

In the darkest times of the armed conflict, not only freedom fighters and soldiers were killed but also many civilians. A military operation was carried out between 1989 and 1998 by Soeharto's regime to suppress the GAM. Although a cease-fire was achieved during the presidency of Megawati in 2002, it was followed by a new military operation in 2003-2004 when the two sides failed to reach an agreement. Although of a relatively brief duration, the conflict became even more severe than it had been previously (Cahyono, 2008; Kawilarang, 2008; Schulze, 2006).

The decision by the Indonesian government to declare a state of military emergency in Aceh created serious problems in the lives of the Acehnese. Open-fire conflicts became commonplace: on any single day there could be two to four crossfire incidents between the GAM and the TNI in villages suspected of supporting the GAM or providing it with hiding places. Social structures and village institutions became practically paralyzed. Many *keuchiks* (village leaders) were killed and people were then reluctant to become village leader. Public facilities were destroyed while the remaining ones did not provide proper services for people (Cahyono, 2008; Irwanto & Nurpatria, 2007; Schulze, 2006).

In this situation, safety became the top priority of the people in Aceh. They struggled to keep themselves and their families safe. Traditional social cohesion was disrupted and people became distrustful towards one another. People were afraid to express opinions as any statement might be considered as threatening security, with possibly dire consequences (Cahyono, 2008; Irwanto & Nurpatria, 2007).

For at least two generations, Acehnese children encountered terror, crossfire, ransacking, and interrogations by both the GAM and the TNI. They often heard news about the death of relatives or other people, witnessed the burning of schools and public facilities, and experienced direct or indirect violence, especially during the night, when terrifying events such as sexual assaults, rapes, and murders often happened (Schulze, 2006). Children could no longer go to the *meunasah* (small praying hall) to pray or practise religious activities with the community. The sounds of shootings and the witnessing of murders severely traumatized people, especially children (Cahyono, 2008; Irwanto & Nurpatria, 2007). From 1976 until 2005, there were around 15,000 cases of civilians, TNI soldiers, and GAM armed men being killed (Kawilarang, 2008).

Prior to the tsunami and for weeks after it, there was ongoing civil tension between the fighters of the GAM and the TNI, which isolated communities. After the tsunami, the Indonesian government decided to take over the power from the Aceh government and coordinate the tsunami relief efforts.

Whether it was this shift in power or the suddenly catastrophic situation, the tsunami was an important incentive for the Government of Indonesia and the GAM to begin peace negotiations. Following the policy of president Yudhoyono, it was decided to open doors for donor and aid organizations to establish recovery programs in Aceh. The decision had a positive effect on Aceh, as entry to Aceh was previously restricted to Acehnese people and military and government personnel. This situation shifted Aceh's situation from being neglected for years, into the focus of everybody's attention (Kawilarang, 2008; Reid, 2006).

A week after the tsunami, the GAM started a dialogue with the Government of Indonesia. Both parties agreed to discuss the steps that needed to be taken to manage the aftermath of the earthquake and tsunami in Aceh. In January 2005, the Government of Indonesia and the GAM started the peace dialog that subsequently progressed through sets of negotiations facilitated by the Crisis Management Initiative (CMI), a non-governmental organization chaired by the former Finnish president Martti Ahtisaari (EU Council Secretariat, 2006)⁶. The last negotiations among all parties were completed in Helsinki, Finland, on 17 July 2005, and they agreed to sign a Memorandum of Understanding (MoU) on 15 August 2005.

⁶ In 2008, the Nobel Peace Prize was awarded to Ahtisaari, in part for his role in solving the Aceh-Indonesia conflict.

The peace treaty was finally signed and the Aceh Monitoring Mission (AMM) consisting of the European Union, five ASEAN countries (Thailand, Malaysia, Brunei, Philippines, and Singapore), Norway, and Switzerland was deployed to supervise the implementation of the peace process in Aceh (EU Council Secretariat, 2006). The treaty included one important issue: the Government of Indonesia agreed to provide for the development of local political parties in Aceh and to grant amnesty to members of the GAM (Kawilarang, 2008; Reid, 2006).

Islam as the Way of Life of the Acehnese

As described in Chapter 1, Islam was brought to Aceh by traders from India and Arabia in the 13th century and has been acculturated since then. Aceh is also known as “the Veranda of Mecca” as it was a place where people could stop to learn about Islam before going to Mecca, Saudi Arabia (Melalatoa, 2005). Almost all Acehnese are Moslem, reflected in a popular saying: “If there is an Acehnese who is not a Moslem, then s/he must not be an Acehnese” (Ara & Medri, 2008). This means that if an Acehnese is not a Moslem, the Acehnese society will not accept him or her as a real Acehnese. Aceh was the first and still is one of the very few provinces in Indonesia, which applies Islamic Sharia (Syariat Islam)⁷.

Islam also manifests itself in the Acehnese art. There are some examples of Aceh's art and culture, such as *Likok Pulo* and *Seudati* traditional dances, which function as a medium for introducing the Islam or for preaching. The song that traditionally follows the *Likok Pulo* dance reflects religious matters to honour the prophet Muhammad as well as to teach the society to avoid sinful ways (Syahrizal & Djuned, 2004). Apart from traditional dances, Aceh is also rich in other arts such as sculpture, music, singing, and literature that are also often inspired by Islam. Through the medium of art such as traditional dances, Acehnese people try to communicate with the Creator (God) as a manifestation of their gratitude for the blessings and gifts given to them. Acehnese artists disseminate the teaching of Islam through art and the verses sung (Melalatoa, 2005).

Islamic values are also visible in the architectural characteristics of the traditional houses of Aceh called *Rumoh Aceh*. Traditional houses in Aceh are built with an east-to-west orientation facing the Qiblah (the direction in which Muslims pray). The *Rumoh Aceh* consists of different rooms representing different rights and obligations of women and men. The front part of the house – the *seramoikeue* – is a guest room for male guests, while the back part of the house – the *seramoilikot* – is the place for female guests. Currently, due to the influence of urban life and the improvement of

⁷ As a matter of fact, the Acehnese already aspired to introduce Sharia before Indonesian independence, but they never succeeded – either under Soekarno's government, or under Soeharto's New Order. Since the fall of Soeharto's regime, Islamic Sharia was set in motion in 2002 (under Abdurrahman Wahid's presidency) by the enactment of UU 18/2001 on the Special Autonomy of Aceh (Kawilarang, 2008; Miller, 2008)

economic conditions, Acehese houses, particularly those in the city, or those constructed after the tsunami, are no longer oriented from east to west but follow the path of an existing road. The rooms of the houses also vary, based on the tastes and needs of the owners (Melalatoa, 2005; Satriani, 2008).

The influence of religious life in the *gampongs* (villages) was very strong before the tsunami. It was reflected in the presence of a mosque and a *meunasah* (small praying hall) in each *gampong*. This is a hall that not only functions as a praying hall, but also as a place to stay overnight for boys who have reached puberty (Melalatoa, 2005), and a place for various activities related to Islamic teaching in the community.

Each village has religious leaders (*imeum / tengku / ustadz / ustadzah*) who are responsible for teaching the Islam. The teaching of the Islam is proclaimed in the mosque and the *meunasah* through the *azan* (call for prayer), *sholat jamaah* (communal praying), *pengajian* (Koran reading), and *tauziah* (preaching by religious leaders) every day after the *sholat jamaah* or *pengajian*. This means that the Acehese are exposed to Islamic values and beliefs from their early years and throughout adulthood.

Another practice of the Islam is manifested in the regular schedule set for the children to perform religious activities. The schedule typically includes *sholat berjamaah* (communal praying) at prayer times, especially in the afternoon (Dzuhur and Azar) and in the evening (Maghrib and Isha). The activities are mostly obligatory for boys, for example to perform prayers in the mosque or *meunasah*, along with other community members. In addition to the prayers, young boys and girls are required to participate in the recitation of the Koran. The Koran recitation schedules may be different from one village to another, depending on the decision of the *imeums* in each *gampong* or *dusun* (an administrative area one level below the village). Usually, the recitals are performed before the Maghrib prayer, after the Azar prayer, or after the Isha prayer. The recitation is mostly performed in groups according to age.

In addition to preaching and prayer for children, there are also religious activities for women, which are commonly called *wirid*. The young men and women in the village have their own religious activity to help teach religious values to the children. Some villages have a Koran reading centre (*Taman Pendidikan Alquran* or TPA) in which the teachers consist of young men and women of the village. Children usually refer to them as the *ustadz* and *ustadzah*.

2.4.4 Time

Time plays a very significant role in Bronfenbrenner's bio-ecological theory. This is because developmental processes always happen in a time frame. When a process is included, a time frame is necessarily involved. Bronfenbrenner's (1994) concept of time is referred to as the chronosystem. According to Bronfenbrenner, "a chronosystem encompasses change or consistency over time not only in the characteristics of the person but also of the environment in which that person lives..." (Bronfenbrenner, 1994, p. 40). Bronfenbrenner suggests that a study considering a chronosystem

needs to address data of at least two points in time. In the case of the tsunami, the study assessed the conditions of the children before, immediately after, and one year after the tsunami.

Bronfenbrenner stated clearly that “a study involving the PPCT model should focus on proximal processes, showing how they are influenced both by characteristics of the developing individual and by the context in which they occur, and showing how they are implicated in relevant developmental outcome” (in Tudge, Mokrova, Hatfield, & Karnik, 2009, p. 207).

Chapter 3

Mixed-Methods Approach to Understand the Children and their Environment after the Tsunami

In order to answer the research questions of this study we employed a mixed-method approach in which a qualitative approach was used as the main method, supported by quantitative methods to strengthen the inquiry and process of analysis. The mixed-method approach combines and integrates two major social science paradigms: the positivist paradigm, based on quantitative methods and the constructionist paradigm, based on qualitative methods (Tashakkori & Teddlie, 1998).

There is a history of continual debate about the basic philosophical assumptions, strategies, and methods of these two major and dominant paradigms (Creswell, 2003; Tashakkori & Teddlie, 1998). Both methods are known to have advantages as well as drawbacks, and because the combination of both quantitative and qualitative data provides “the best understanding of a research problem” (Creswell, 2003, p.12), both were used in our study.

We employed ethnographic and case-study approaches combined with self-report questionnaires as methods to acquire data, and used both qualitative and quantitative data analyses to obtain the results of the study. We expected that the use of a mixed-method design could help us to obtain thorough information about the children, their environment, and their situation before, during, and after the tsunami, and help us to understand the Acehese children’s process of adaptation after the massive devastation caused by the tsunami.

3.1 Approaches

3.1.1 Ethnographic Approach

The ethnographic approach is commonly used in qualitative research to scientifically study the social and cultural life of a society, institution, or other settings. This approach employs a number of research methods and data collection techniques to avoid bias and produce accurate data (Creswell, 2003).

In order to understand the lives of the Acehese children after the tsunami, how the tsunami impacted the children and their families, and how Acehese children faced numerous difficulties and adapted to changes, we needed to understand the context in which they lived. It was essential to know the cultural background of the society so that we could understand their reactions and habits, including how they coped with daily situations.

We chose to employ an ethnographic approach through active and prolonged involvement in the community and the daily lives of the participants. The setting of the research was designed to be as natural as possible. This study was conducted by the author as the main researcher with the help of one assistant and four local people for collecting the data. The main researcher stayed with families in

barracks on several occasions (days or weeks in a row) and spent time with the members of the community by taking part in their daily activities (cooking, market shopping, casual conversation with neighbours, and joining social activities organized by other institutions inside the community). In order to develop and maintain a good relationship with members of the community, the main researcher, who is from Jakarta and non-Muslim, wore *hijab* during the field visits and learnt to speak the Acehnese language.

The active and prolonged involvement of the researcher's team in the community decreased the distance between the team and the participants. Such an approach was important for building trust and a good personal relationship with the children and their communities, in order to obtain valid and reliable information (Creswell, 2003). Therefore, the choice of this ethnographic approach not only greatly reduced the risk of unintentional traumatising of participants, but also increased the quality of the data collected (cf. Thastum, Johansen, Gubba, Olesen, & Romer, 2008).

3.1.2 Case-study Approach

Case study is also one of the approaches used in qualitative research. Its purpose is to gain a deeper, more intensive and more detailed understanding of one or more subjects or documents or events (Creswell, 2007). In this study, we attempted to gain a profound understanding of the situation of children in several villages in Aceh after the tsunami and to find which factors played a role in the children's ability to adapt to the dramatically changed circumstances.

The case-study method was selected to obtain information about the experiences of our participants (children and significant others) related to the tsunami and their personal history, as indicated in the research questions. We expected case studies to provide a thorough understanding of the children's personal traumatic experiences during and immediately after the tsunami, their traumatic grief reactions, and also their interactions with their microsystems (family and peers) and mesosystem (neighbourhoods).

The fact that the study dealt with traumatic experiences meant that discussing the experiences with the participants could potentially harm them if the study was not conducted in a careful and thoughtful way. Therefore, besides our involvement in psychosocial activities with the children, we also played together with the children and participated in their day-to-day activities. Various kinds of activities were carried out to strengthen the relationship between the researchers and the children. These activities included bathing in the river, playing with seashells, engaging in relaxed conversations in the children's shelters and accompanying the children in traditional dance and music competitions. The active involvement of our research team helped participants to feel secure during the interviews and the observations of their behaviour. We believed that a good relationship and an approach that was unobtrusive and well adjusted to their daily lives would build trust and make them more willing to disclose their thoughts and inner feelings to the researcher and the team.

3.1.3 Self-report Questionnaire

It was necessary, however, not to restrict ourselves to a qualitative study, because children, especially in Aceh, are limited in their ability to express their ideas and feelings verbally⁸. Therefore, quantitative tools such as questionnaires with simple questions were used to gain information from all children. The use of questionnaire to assess the children's trauma reactions was also expected to minimize the chance of harming the children psychologically, because children had the freedom to reject the questions or answer them in a more impersonal fashion (Thastum et al., 2008). In this study, a self-report questionnaire was used to identify the trauma symptoms of the children one year after the tsunami.

3.2 Roles of the Researcher

Qualitative research focuses on results based on observation and in-depth assessment carried out by the researcher. In ethnography and case study research, the role of the researcher is crucial, both as the key instrument and as an active participant in the observation process. As the key instrument, the researcher must be aware that he or she is planner, data collector, analyst, and at the same time reporter of his or her own research. A researcher must avoid bias that may disturb the objective interpretations of the subjects of study. Therefore, the validity and reliability of qualitative data greatly depend on the methodological skills, sensitivity, and integrity of the researcher (Creswell, 2007).

In order to understand the meanings and symbols of interaction within the cultural setting of the subjects of study, we were required to become involved and immerse ourselves in the lives and context of the community members. This involvement and immersion would result in a more empathetic and balanced interpretation of what was going on in the community.

In exploring the daily lives of the participants in the study, we needed to engage and conduct direct observations and interviews with community members. Therefore, we needed *gatekeepers* to enable us to enter the community, to facilitate a smooth process of recognition by the society, and to enable us easily to become part of it. All gatekeepers in the research process are Acehnese and they were obtained through two NGOs: an international NGO named Care International Indonesia and a local NGO named SEFA (Save Emergency for Aceh). We collaborated with these two NGOs in order to gain access to the children and their communities. These two NGOs worked for children globally (Care International Indonesia) and locally (SEFA) without any discrimination based on religious, cultural, or political backgrounds. We were able to meet the leaders or village officers and eventually

⁸ As a consequence of prolonged armed conflict, the Acehnese and especially their children have not had enough opportunities to learn Bahasa Indonesia as a language for social communication (see Irwanto & Nurpatricia, 2007). Moreover, open verbal expression is generally not encouraged in most Indonesian schools, especially not in the provinces.

the parents and children in the study as a result of coordination and communication with social workers of the two NGOs. The participants in the study and their families were informed about the presence and involvement of the research team.

We realized that a good and trusted relationship as well as mutual understanding with people in the community before, during, and after conducting the field work is a key element for successful data collection. Therefore, we tried to adapt to the situation and maintained good relationships with people in the community even though there were potential constraints between the main researcher and the people in the community. The potential constraints were the religion of the main researcher (non-Muslim) and her place of origin (Jakarta). Acehese people were known to be guarded and sometimes even distrustful towards people from Jakarta because of the prolonged conflict with the central government. Therefore, the involvement of local data collectors was very important.

Ethnographic research requires long-time involvement and face-to-face interaction with the community in order to gain a better understanding of the participating children, their community, and the culture of the community. It was envisaged that prolonged engagement in the community would help to minimize the gap between the researchers and the local people. In this research, the main researcher came to Aceh two months after the tsunami (in February, 2005 for two weeks) and continued to visit Aceh regularly until the end of October 2006 (see Table 2). Between January and October 2006 was the period of the most intensive involvement of the main researcher and the team in the field. We lived several times with families in barracks. We also spent as much time as possible with the community by taking part in their daily activities. A high level of trust between the research team and the participants in the study was developed and this helped to ease the data collection.

3.3 Criteria of Participant Selection and Recruitment Processes

3.3.1 Selection of the Villages

In order to obtain a holistic understanding of the situation of child survivors of the tsunami and their context, this study needed to be carried out in villages that met particular criteria: 1) the village had to be assisted by an NGO, 2) there should be a severe level of destruction in the village, 3) there needed to be many children between 10 and 15 years old in the village, and 4) the children in the community needed to be available and accessible during the period of the study.

Before the study was conducted in certain villages, we initially assessed the situation, communities, children, and various kinds of shelters and places of refuge by contacting several NGOs that implemented programs in Aceh. We approached four NGOs to seek cooperation with them for the study. A final cooperation agreement was settled with two of them: SEFA and Care International Indonesia.

After a series of observations conducted in various locations followed by discussion and consultation with leaders of SEFA and the psychosocial division of Care International Indonesia, we selected five communities that suited the criteria for involvement in this study. Four camps/barracks/shelters in four villages were assisted by Care International Indonesia, i.e. *Pramuka* camps in Terbeh (Jantho sub-district), shelters in Tanjong (Lhok Nga sub-district), *Lapangan Bola* barracks in Lambaro Skep (Kuta Alam sub-district), and barracks in Rima Keuneureum (Peukan Bada sub-district); and one group of barracks in Lampineung village (Baitussalam sub-district) was assisted by SEFA. The decision to involve only one village from SEFA was due to the fact that most communities assisted by SEFA stayed at temporary shelters, and the people were expected to move back to their original villages within three or four months. Many camps and shelters built in Aceh Besar and Banda Aceh were temporary, and after some time the children would return to their original place of residence. Because data collection was expected to require at least six months, these children would not be able to participate in the whole period of the study.

The five villages were selected as the best locations for data collection. Four villages (Terbeh, Tanjong, Rima Keuneureum, and Lampineung) were located in Aceh Besar District and one village, Lambaro Skep, was in Banda Aceh. The degree of destruction of housing and infrastructure in the five villages was high. At least 75% of each village was devastated. In Pulo Aceh, the original residence of the people who fled to Terbeh, 98% was devastated. In Lampineung 90%, in Lambaro Skep 80%, and in Tanjong and Rima Keuneureum 75%.

In the process of data collection, one village (Rima Keuneureum) was dropped from the study because people in the community had conflicts with the NGO. The condition was not conducive to continue the research there, and the NGO recommended us not to include the village in the study.

3.3.2 Criteria for Participants and Recruitment of Subjects

This study focused on preadolescents and early adolescents (10 to 15 years old) who were survivors of the tsunami. We chose these periods in child development because pre- and early adolescence are critical periods in the development of a child to an adult. Furthermore, research on the impact of a disaster on children in this developmental period was lacking (especially in Indonesia), because following a disaster, adolescents tend to be overlooked (Zubenko, 2002). Therefore, understanding more about the specific situation of preadolescents and adolescents following a disaster will help to develop more appropriate interventions for them to prevent serious psychological and developmental problems in the future.

The study started by approaching a large number of children and continued by a closer investigation of a smaller number of them. Approximately 165 children aged 10 to 15 years were involved in the initial assessment. Most of these children participated in a series of psychosocial

activities⁹ that were organized by the researcher in collaboration with the NGOs working in the four selected villages. Within a period of three months (January to March 2006) a number of activities such as game-playing and recreational activities were organized as a way to become acquainted with the children and build a good relationship with them. Children of different ages participated in these activities, including children younger than 10 years old. This latter group of children were not involved in the study, but they were nonetheless allowed to participate in the activities organized by the research team. It was important to do this to avoid feelings of being ignored or discriminated within the communities.

From the initial group of 165 children, 30 children met the additional criteria to be selected to participate in the case study research. The additional criteria were: (1) having suffered the loss of at least one nuclear family member and (2) being available during the data collection period. Nevertheless, eight of the selected children moved to other places before the end of the period (e.g., to an orphanage, a religious boarding house, a house of the extended family outside Banda Aceh or Aceh Besar districts), which left 22 children for the case studies. There were ten boys and twelve girls, all between 10 and 15 years of age. Table 1 provides the basic information about the twenty-two participants in this study. In order to protect the privacy of the children and their families, we use pseudonyms for each child.

Table 1. Basic Information about the Participants

No	Name	Sex	Age	Village	Family Loss
1	Mariana	Girl	12	Terbeh	Grandmother, 3 of 4 siblings
2	Yuli	Girl	13	Terbeh	2 of 5 siblings
3	Hanum	Girl	15	Terbeh	1 of 6 siblings
4	Azizah	Girl	12	Terbeh	1 of 3 siblings, 1 nephew
5	Titin	Girl	15	Lambaro Skep	Mother
6	Komar	Boy	13	Lambaro Skep	Mother
7	Rifa	Girl	12	Lambaro Skep	Mother
8	Fira	Girl	12	Lambaro Skep	Father
9	Amel	Girl	11	Lambaro Skep	Mother, 1 of 6 siblings
10	Panji	Boy	12	Lambaro Skep	Mother
11	Kaka	Boy	11	Lambaro Skep	Father, 1 of 2 siblings
12	Jamal	Boy	11	Lambaro Skep	Both parents, 2 of 5 siblings
13	Ilham	Boy	13	Tanjong	Father
14	Riska	Girl	11	Tanjong	Father
15	Wahyu	Boy	12	Tanjong	1 of 2 siblings
16	Disa	Girl	11	Tanjong	Both parents, 2 of 4 siblings

⁹Psychosocial activities are series of regular activities that may consist of refreshing activities or games, to help children to feel good. These activities can help to build a good relationship with children in the communities (Arntson & Knudsen, 2004).

No	Name	Sex	Age	Village	Family Loss
17	Aning	Girl	11	Tanjong	Father
18	Riswan	Boy	13	Tanjong	Both parents, all 4 siblings
19	Deri	Boy	10	Lampineung	Mother, 1 of 2 siblings
20	Fati	Boy	10	Lampineung	Both parents, all 3 siblings
21	Andi	Boy	10	Lampineung	Father, 1 of 2 siblings
22	Rini	Girl	12	Lampineung	Mother (Father died before the tsunami)

Twenty-two children participated in the case study. This was the maximum number of children that could be found in the four selected villages. It was not easy to find children who had both lost family members and stayed in the village during the period of the study because most children who lost parent(s) were sent to orphanages, religious boarding houses, or houses of extended families. In the initial process of selecting villages for the study, we omitted several villages from the list of potential participants because they had only very few children aged 10 to 15 years or no children who had lost family members.

The efforts to involve as many children as possible to participate in the study were also done through outreaching activities. This means that we approached not only children who joined programs of Care International Indonesia and SEFA, but also children who did not join. In addition, NGOs had access to the parents so that we could also reach those of their children who did not participate in the NGOs' activities. Among the twenty-two participants, five children did not participate in the NGOs' programs and were reached outside the programs.

For the case study, in order to get a deeper understanding of the children and the processes involved within their bio-ecological context, not only the children (if they were able to talk about the tsunami), but also other people closely involved with these children were interviewed. Significant others (parents, siblings, and other close family members), close friends, close neighbours, social workers, teachers, psychologists, and local leaders who were familiar with the day-to-day situation of these children and their context were involved as informants. For each child, there were at least four of these additional informants. Between January and October 2006, 22 children and 37 significant others of these children, 23 friends and close neighbours, 18 local social workers, mentors and teachers, six local leaders, and two psychologists participated and gave information about these 22 children and the context in which they lived. In this case study, 108 people participated: the 22 children and 86 informants. Children and parents were informed about the purposes of the research and their informed consent was obtained. It was made clear to them that they were allowed to withdraw from the study at any time during the course of the study if they did not want to continue participation.

3.4 Instruments

3.4.1 Interviews

We conducted semi-structured interviews with predominantly open-ended questions (see Appendix 1). The questions were about (1) the traumatic experiences during the tsunami, the danger the children were confronted with, the deaths of family members, and the exposure to frightening situations; (2) the children's traumatic grief reactions and the decrease in their daily functioning immediately after the tsunami and the children's trauma symptoms one year after the tsunami; (3) the changes in the family situation regarding family structure and relationships among family members after the tsunami; (4). the children's academic functioning, functioning at home, and functioning with peers before and one year after the tsunami; (5) the situation and relationships of the children and their peers after the tsunami; (6) the conditions in the larger social context of the children regarding the infrastructure of the villages, water and sanitation of the shelters, the close-neighbours' interactions with the children, the psychosocial and religious routine activities; and (7) the influence of the prolonged conflict, patterns of kinship relationship, and Islamic beliefs, norms, and values in Acehese children's lives after the tsunami.

These questions were asked while taking into account the specific relationship of the informants (parents, siblings, extended family, etc.) with the child. Significant others were the main informants, and they were asked most of the questions. For the children, some questions were omitted in order to minimize the chance of emotionally upsetting them, and the remaining questions were adjusted to their age whenever necessary.

The semi-structured interview guide for this study is provided in Appendix 1. Interviewers were allowed to probe the participants or to adapt questions depending on the situation of the informants while using the interview guide.

3.4.2 Observation

We observed the participants during our daily interactions with the children, families, and community, and also during the psychosocial activities that were held regularly in the community in collaboration with the NGOs. We were also involved in programs implemented by other organizations for children in the villages. During our observation, we focused on the children's, peers', parents', and neighbours' interactions in the family and community. The researcher and her trained assistant were the main observers, assisted by four Acehese assistants as data collectors. The research team (all six of us) met regularly to share and discuss the field observations to validate the observation results. We also made field notes about what we observed in order to understand more about the context of the participants' behaviour. There was also a simple observation guide to facilitate focusing on the behaviours and responses that needed to be recorded (see Appendix 2).

3.4.3 Questionnaire

In order to assess trauma symptoms of the children one year after the tsunami a self-report questionnaire was used: the Trauma Symptoms Checklist for Children-A (TSCC-A), developed by Briere (1996). It was designed to assess trauma symptoms of children 8 – 16 years of age. A detailed description of this questionnaire will be presented in Chapter 5.

3.5 Ethical Issues

Several concerns about the ethical issues of this study and the way in which these issues were addressed are described below:

1. Discussing the tsunami with the children could potentially harm them because it could open psychological “wounds”. For this reason we decided not to ask the children themselves about the tsunami and other traumatic events. Some children, however, spontaneously told their story, their “version” of the tsunami and the traumatic experiences they faced, without being asked about it. If the child seemed to have recovered from the traumatic events, we asked about his/her personal experiences of the tsunami and the traumatic experiences, emphasizing the right of the child to not answer the questions if the child did not want to answer. For children who were willing to share their experiences, we played not only the role of data collector, but also carried out the interview sessions with an active listening and empathetic approach.
2. Informed consent to participate in the research was obtained after verbal explanation. The consent of the child as well as his or her parent or caregiver was obtained verbally instead of as a signed document. It was decided to follow this procedure because of information provided by the NGOs. The NGOs warned that signing a paper might be interpreted by the participants as a contract or a promise that they would later receive money or financial support in exchange for participation (Indeed, there were many negative reactions from the community about institutions or NGOs that came and made promises that they did not fulfil).
3. Informed consent and agreement of the children and their parents to participate in the study, included involvement in interviews, tape-recording during the interviews, filling in the questionnaires, and involvement in psychosocial activities. If they were unwilling to be tape-recorded during the interview, we respected this and made notes about the content of these sessions immediately afterwards. Eight child participants and twelve significant others were unwilling to be tape-recorded.
4. Data collection for research is usually seen as ‘only’ obtaining information from a community without any benefit for that community. We felt such a procedure would be inappropriate in this situation. Therefore, we collected the data over an extended period of time and were involved in daily interaction with the community. We also organized psychosocial activities for the children

and carried out other activities as requested by the community, such as giving English lessons to children and mothers. After the first preliminary data analysis was done, we went back to Aceh (in 2009) to ask the children and their informants whether we had adequately interpreted the information they had given before. We also gave feedback and recommendations to the children personally and to their parents and families.

5. This study received ethical clearance from the Ethics Committee of the Atma Jaya Catholic University number 049/LPPM-KI/01/2009.

3.6 Validity or Credibility of the Study

Qualitative studies often raise questions concerning the credibility of the study, the validity of the data collected, and the methods of analysis. These questions may arise because in a qualitative study the researcher plays a key role in every stage of the research process. The researcher is like a research tool him- or herself, so certain measures need to be taken to ensure that the results will be unbiased and objective. Basically, subjectivity cannot be totally eliminated from any empirical study, but qualitative studies are of special concern in this regard (Patton, 1990; Poerwandari, 1998).

Creswell (2007) stated that validation is “a distinct strength of qualitative research in that the account made through extensive time spent in the field, the detailed ‘thick’ description, and the closeness of the researcher to participants in the study, all add to the value or accuracy of the study” (p. 207). Kirk and Miller (1986) defined validity as “the degree to which the finding is interpreted in a correct way” (p. 20). Some qualitative researchers addressed the validity of the study by using terms such as ‘credibility’ or ‘authenticity’.

Following Creswell’s suggestions about the issue of the validity or credibility of a study, we conducted several important procedures, i.e. (1) we were actively involved in the field for a prolonged period of time and developed trusted relationships with the participants, (2) we used triangulation methods and carried out *inter-rater* reliability procedures, (3) we presented the preliminary interpretation of the study to the children and parents separately and asked for feedback from them, and (4) we provided a ‘thick’ description of the results of the study. In addition to these procedures, we took another important measure to guarantee the validity of the study by applying the empathetic neutrality approach, in which empathy is used to understand the participants and the context of the study and neutrality is used to interpret the data gathered from the study (Poerwandari, 1998).

Regarding triangulation, a mixed-method research design provides the opportunity to use various methodologies in combination in order to obtain valid and reliable data. The combination of methods used in the study is called ‘triangulation’. Three types of triangulation were used: data triangulation, methodological triangulation, and investigator triangulation (Denzin, 1978; Tashakkori & Teddlie, 1998).

Data triangulation refers to the use of a variety of data sources. In this study, data were obtained from various informants (at least five informants per child). They could be significant others (parents or caregivers, siblings, or members of the extended family), friends, close neighbours, social workers, teachers and the child him- or herself. Methodological triangulation refers to the use of multiple methods to study research problems. In this study, we used a combination of qualitative and quantitative tools in data collection procedures and analyses. Investigator triangulation refers to the use of different data collectors / observers. In this study, data were collected by two trained observers/interviewers (i.e. the main researcher and her assistant) and by four local research team members who spoke Acehnese and received regular training in data collection and who helped in conducting the observations and interviews. These data collectors were in regular contact with each other to discuss the data collection process.

3.7 Process of Data Collection

Data were gathered during particular periods of time, through several consecutive steps (see Table 2).

Table 2. Periods and Activities of Data Collection

Period	Activities in Aceh
February, August, November 2005	1. Preparation phase [part of ethnographic approach] <ol style="list-style-type: none"> Becoming familiar with the post-tsunami situation Seeking for cooperation with NGOs Searching for financial support, instruments' preparation and try-out
January - March 2006	2. Data collection phase <ol style="list-style-type: none"> Approach and initial assessment [part of ethnography, case study, and self report data inquiry]: <ul style="list-style-type: none"> building rapport with the community in collaboration with NGOs, series of psychosocial activities conducted for children, quantitative data collection carried out during the psychosocial activities, assessment of children and families who fulfilled the criteria for participation in the study, preliminary qualitative data collection
March – October 2006	b. Qualitative data collection (ethnography and case study data inquiry) <ul style="list-style-type: none"> in-depth interviews, psychosocial activities for the children and community, observations, field notes.
July 2009	3. Data validation and feedback to participants.

3.7.1 Preparation Phase (February, August, and November 2005)

The first visit to Aceh in February 2005 aimed to attain familiarity with the post-tsunami situation, in which the main researcher observed the situation, communities, children, and various kinds of shelters and refuge places. In August and November 2005, the main researcher and her assistant went back to Aceh to obtain a more elaborated description of the situation in the targeted

communities and the work of various NGOs in Aceh. We approached four NGOs to ask for their cooperation in the study; a final cooperation agreement was settled with two of them: SEFA and Care International Indonesia. In addition, we submitted proposals to various international NGOs operating in Aceh to obtain financial support for the study and received a positive response from Caritas Germany. The financial support did not fully cover the study's expenses; however, it was very important in supporting a series of field-work periods. In November 2005, we started to participate in the work of SEFA and Care International Indonesia by approaching targeted communities for the study. In November 2005, we also prepared the instruments, partly based on the results of discussions with social workers, parents, and children in the community. The preliminary versions of the instruments were immediately tested on children staying at the temporary barracks assisted by SEFA and to other barracks assisted by an NGO, which finally discontinued its participation.

3.7.2 First Data Collection Phase (January – March 2006)

Initial data collection was conducted from January to March 2006. We approached the communities and organized psychosocial activities with a large number of children in the four villages. These activities were needed as an entry point to work with the children. The community was approached through several steps: the first was to obtain permission from community leaders, followed by obtaining permission from parents (meeting with parents) to carry out activities with the children and to do the assessment. Everything was done in collaboration with the NGOs working in the chosen areas at that time. Parties involved in approaching the children were: local leaders within the community such as *keuchik* (the head of the village), barrack/camp leaders, leaders or members of women's organizations, and social workers and other organizations working in the community such as Care International Indonesia, UNICEF Children's Centre, Koran Reading Centres (*Taman Pendidikan Al Quran* or TPA), Save the Children cadres, and SEFA (Save Emergency For Aceh). After receiving confirmation from all parties that we could work in the community, we started to take further steps to get to know the community better and more comprehensively. In this phase, we were involved in many activities and programs in the villages conducted by various NGOs.

During several sessions of the psychosocial activities, we collected quantitative data. We combined play activities or games with filling in questionnaires. We started with playing games before we asked children to sit and fill in questionnaires and then continued by playing another game. If there was still time available, we continued with another questionnaire and then we closed the session with another game.

In the process of building good relationships with children, parents, and the community, we did an assessment of children and families who fulfilled the criteria for participation in the case study. Apart from the chronological age (between 10 and 15 years old) and being a survivor of the tsunami, the other criterion was that the child had lost at least one of his/her family members. After identifying the children who met the criteria, we collected preliminary qualitative data by conducting a series of

interviews with these children, their significant others, and the social workers involved. We also conducted participant observations during psychosocial activities and during daily interactions with them. Initially, 30 children were recruited for the study.

3.7.3 Second Data Collection Phase (March – October 2006)

Qualitative data collection was conducted through a series of interviews with the children and their significant others. We also became involved in the community and did participant observation (during psychosocial activities and daily interactions, and by staying in the houses of participants). During this period, we also tried to complete the data for some children who had not yet completed all the questionnaires previously. Qualitative data were collected from twenty-two children, their significant others, and other informants. Eight of the 30 children could not be followed up because they had left the villages in which the study was carried out. Interviews with the children were conducted in one to three sessions, with parents or caregivers in two to four sessions, and with other informants in one to three sessions, depending on the availability of the informants. Informal interviews with informants and other members of the community took place as often as needed. Group interviews were conducted with groups of social workers, mothers, and children especially to gain general information about the situation before and after the tsunami, religious and psychosocial activities, rituals, habits, and various aspects of the community and the Acehnese culture.

Interviews with children were done in a different way from interviews with adults. If the child could speak the Indonesian language fluently, we interviewed the child alone or at the child's convenience with friends or adults to accompany him or her. But if the child could not speak Indonesian fluently, we interviewed him or her in the presence of someone acceptable to the child. This person could be a social worker or mentor who could speak both Acehnese and Indonesian and who had a close relationship with the child. For interviews with adults, especially with parents or caregivers, we used translators because many parents / caregivers could not speak the Indonesian language fluently.

3.7.4 Feedback and data Validation (July 2009)

Data validation and feedback sessions for participants were organized. We discussed the preliminary results of our study with the children, their parents/caregivers, and mentors. This visit was also intended to get an idea of the current situation of the children and the community.

3.8 Data Management and Analysis

All raw data from interviews and observations were transcribed, organized, and coded according to relevant themes that emerged (see Appendix 3). Relevant themes were the traumatic experiences during the tsunami, the level of danger during the tsunami, the loss of family members,

the changes in family structure, grief reactions after the tsunami, children's recovery after the tsunami, the post-tsunami financial and housing conditions, the relationships with family members, peers, neighbours and social workers, and religious practises. These themes will be described in Chapter 4.

In Chapter 5, we will describe the children's patterns of adaptation and their trauma symptoms one year after the tsunami. We will also analyse how the patterns of adaptation were related to risk and protective factors in the children's personal characteristics and proximal environment (family, peers, and neighbours). We decided to assess patterns of adaptation based on the children's level of functioning before, immediately after, and one year after the tsunami. We also determined a score for each risk and protective factor. First, we developed relevant categories for each factor in collaboration with two experts. One was a clinical psychologist who specializes in grief and trauma after a disaster and the other was a social psychologist specializing in children and post-disaster psychosocial intervention. Secondly, each rater and the main researcher independently scored each factor for each child. The reliability of the scores was assessed by means of inter-rater agreement. This study used the Intra-class Correlation Coefficient (ICC) to assess the inter-rater reliability. The inter-rater reliability coefficient for each variable was calculated based on the scores given by the two raters and the main researcher. For each child, the final score for each factor was obtained by computing the mean score of the three raters' scores. The final scores were used to perform the subsequent statistical analyses.

In order to answer Research Questions 6 and 7 and to qualitatively analyse the cases of the twenty-two children, we applied *pattern analysis*, *within group analysis*, and *between-group comparison*. In the first step, i.e. *pattern analysis*, we classified each participant in a pattern of adaptation based on his or her level of functioning before the tsunami, his or her traumatic grief and functioning immediately after the tsunami, and his or her level of functioning one year after the tsunami. We also classified the children's trauma symptoms one year after the tsunami on the basis of their TSCC-A scores and we provided additional information about their trauma symptoms according to informants' reports.

The next step was *within-group analysis*. We analysed the specific characteristics of the children in each pattern regarding the presence of risk and protective factors in their proximal environment. We employed proximal process analysis by observing and comparing the stories and proximal characteristics of the children within the same pattern.

The third step was *between-group comparison*. In the *between-group* comparison, we compared the characteristics of each pattern with regard to: (1) the loss of loved ones and traumatic grief reactions immediately after the tsunami, (2) the children's individual characteristics before the tsunami, (3) the changes in the structure of the family and risk and protective factors in the caregiver-child relationship (family support and family threat), (4) protective factors from internal and external aspects (religious coping, active participation in psychosocial programs, peers' support, the support from neighbours and from adult mentors), and (5) risk factors from peers and neighbours.

In order to back up the results of the qualitative data analyses, we carried out quantitative data analyses. We analysed the associations between the children's patterns of adaptation and factors within their bio-ecological systems. We used the Mann-Whitney U test to examine differences between groups (e.g., boys versus girls; children who are supported by a mentor versus children who are not) with regard to the children's patterns of adaptation. Spearman's rho correlations were computed to examine whether there were associations between patterns of adaptation and each of the following variables assessed at interval level: sociability, obedience, pro-social tendency, enthusiasm, and irritability.

We also analysed associations between the children's patterns of adaptation and the cumulative risk and protective factor. We combined all the risk factors from the personal and environmental level (the level of irritability, and threat from family, peers, and neighbours). We also combined all protective factors from the internal and environmental level. Spearman's rho correlations were computed to examine the associations between patterns of adaptation and the cumulative risk and the cumulative protective factor.

Chapter 4

Children's Personal Experiences before and after the Tsunami: an Ethnographic and Case Study in the Four Villages

This chapter describes the personal and environmental aspects of the child participants before and after the tsunami. Five research questions will be answered in this chapter:

1. What traumatic experiences did the children have during and immediately after the tsunami regarding the exposure to danger, family loss, and changes in the family structure and relationships?
2. What were the traumatic grief reactions of the children immediately after the tsunami, their point of recovery, and changes in their behaviour?
3. What were the post-tsunami physical and psychosocial conditions in the villages?
4. How did the kinship patterns in Aceh provide support and challenge for the children?
5. How did Islamic norms, beliefs, and values, and the religious practices in Acehnese society influence Acehnese children in facing their daily lives following the tsunami?

The structure of the chapter follows the order of the research questions; therefore aspects of the personal traumatic experiences will be described first. The personal traumatic experiences include a description of the children's exposure to the danger and the family loss. Along with the description of family loss, we describe changes in the structure of the family, and the children's relationships with their caregivers before and after the tsunami. The next part describes the children's traumatic grief reactions, their recovery, and changes in their behaviour.

After that, we describe the situation at the more distal level, i.e. the post-tsunami physical conditions of the villages, and the financial and housing conditions of the children's families. We also describe the psychosocial programs in the communities. The next part is about two aspects of the macrosystem that had a strong influence on the lives of the Acehnese after the tsunami i.e. the kinship system, and the religious practices in the communities, families, and individuals' lives.

The description of the personal traumatic experiences and the context of the child participants will be used to identify possible risk and protective factors within their bio-ecological systems that might influence the children's pattern of adaptation. The description will also be used as a basis for developing categories for the risk and protective factors examined in the study. In order to answer the five research questions above, we used ethnographic and case study approaches.

4.1 Traumatic Experiences and Family Loss in the Tsunami

The tsunami went inland as far as five kilometres (Kawilarang, 2008). It struck Aceh in three consecutive waves. All participants originally lived in villages located about 0.2 to 3 kilometres from the shoreline, and so their villages were severely devastated. The condition of the villages after the tsunami was such that they were unfit for habitation. The infrastructure damage was about 75% to 98%, causing the people to take refuge in other areas until they could live again in their own villages. Reconstruction of the facilities took at least three months. Thus, for three months or more, the people were forced to live anywhere where they could survive, either in a relative's house, in temporary shelters built by the government or aid agencies, or in tents erected around the rubble of their houses.

With regard to the personal traumatic experiences, all child participants faced a dangerous and terrifying situation during and immediately after the tsunami. In this study, we investigated the traumatic experiences they had during the tsunami, the injuries they suffered, the way they escaped from the waves, the absence of familiar people during the tsunami, and other terrifying experiences such as witnessing people being swept away by the water and crying for help, and seeing dead bodies on the streets. The exposure to danger and terrifying situations during the tsunami could affect the psychological well-being of the children.

Losing family members was also one of the traumatic experiences that the children had during the tsunami. Family loss includes the loss of at least one of the inner-circle family members, such as siblings, parents, and grandparents. In many Aceh families, the inner-circle also includes a grandmother or grandfather who lives with or is very close to the family.

All the child participants lost at least one of their family members. The loss of family members brought significant changes in the lives of these surviving children. This included changes in the structure of the family, the parent-child relationships, and changes in the roles in the family (such as becoming a single parent or becoming an orphan). These changes often had bad influences on the situation of a family, and could cause a decrease in the quality of the relationships between family members, but, on the contrary, could also strengthen their mutual relationships. With regard to the loss of family members, we registered who had died and who survived and we also made notes about the quality of the relationships a child had with his or her family members before and after the tsunami.

On the basis of the testimonies of the children (when they spontaneously talked about it) and interviews with significant others of the children, we describe the danger and terrifying moments experienced by the children during the tsunami in the following paragraphs. We also describe the loss of loved ones and the tsunami-induced changes within families regarding two aspects: family structure and relationships within the family. The description is grouped by village because the children and their friends from the same village often had similar experiences.

4.1.1 Terbeh Village

People who lived in a camp named *Pramuka* in Terbeh after the tsunami, were originally from villages on Pulo Aceh (a small island near Aceh Besar). The island was totally (i.e. 98 %¹⁰) devastated by the tsunami. The waves swept away nearly everything, so that it became a desolate island. From 17 villages, only one was left. Buildings, houses, roads, schools, hospitals, and other infrastructure had vanished. Many survivors of Pulo Aceh were housed in several camps in Terbeh village. In one of these camps we selected four children for our study.

Children's Exposure to the Danger

When the tsunami struck, three children from Pulo Aceh, Mariana (girl, 12 years), Yuli (girl, 13 years), and Hanum (girl, 15 years), were at their school, which was very close to a mountain. They had a special event at school, and were all prepared to dance at a ceremony. They immediately climbed the mountain wearing their dance costumes. Many children from that school were safe because they had been at school, while their family members were swept away by the waves and died because their homes were very close to the beach. These children thought that if they had not had that event at school, they would have died like their families and neighbours. Another child from the same island, Azizah (girl, 12 years), was at home but was able to escape in time to a high hill with her mother, father, and two brothers.

Even though on the mountain they were safe from the waves, these children were not safe from cold and hunger because they were not prepared with clothes and food. They also felt threatened by the continual earthquakes. During their stay for three to five days on the mountain, they relied only on water and food from the forest. Three of them were separated from their parents. They stayed only with friends, teachers, or neighbours. They were frightened, shocked, hungry, and longing for their families. They did not even know whether their parents and relatives were still alive.

Family Loss and Changes in the Structure of and Relationships within the Family

Yuli, Hanum, and Azizah lost sibling(s), while Mariana lost not only three siblings but also her primary caregiver, her grandmother, who lived with her in the same house. Table 3 provides information regarding family loss and changes in the family structure of the children in Terbeh village.

¹⁰ Sources: Samsul Bahri the subdistrict head of Pulo Aceh (10 December 2005) cited from <http://siteresources.worldbank.org/INTEASTASIAPACIFIC/Resources/Ceureumen-10.pdf>

Table 3. Family loss and surviving family members of the child participants in Terbeh village

Name	Lost caregivers	Lost Siblings	Number of losses	Surviving family members
Mariana	Grandmother	Eldest brother, 2 younger brothers	4	Both parents and 1 elder sister
Yuli	-	Eldest sister, 1 toddler brother	2	Both parents and 1 elder brother
Hanum	-	1 elder brother	1	Both parents and 5 elder brothers
Azizah	-	1 elder sister, 1 nephew	2	Both parents and 2 elder brothers

Mariana experienced the greatest loss, even though the structure of the family did not change much because both of her parents survived. Before the tsunami, Mariana was very close to her grandmother, her eldest brother, and her youngest brother, who was still a toddler. Yuli and Azizah were very close to their elder sisters and the toddlers of the family. Hanum also felt very close to her elder brother who died in the tsunami.

After the tsunami, the quality of the relationship between Mariana and both of her parents became much better than before. Mariana's parents tried hard to recover from their traumatic grief reactions; they had lost their three sons and many people of their extended family. Mariana's mother said:

"We lost our three sons. We were devastated. For months we were often confused and depressed. When there was no activity, we spontaneously remembered the children, especially the little one. If we had not been strong, we could have gone mad. But it couldn't go on like that forever. We had to do something. That's why we tried to have activities, and we both work. I plant chilli pepper, and my husband, who was a fisherman, now works for Care International as a carpenter. We are aware that these activities can heal. Right now we live for Zahra and Mariana, but especially for Mariana, who was so distressed by the loss of her youngest brother. She was the one who seemed the most shocked." (Mariana's mother, Terbeh, February 2006)

Hanum's parents and elder brothers also showed much care and attention towards her because she was the youngest and the only girl of the family. Yuli's father seemed to be especially impacted by the tsunami. He did not want to talk about it and became very silent and less attached to the family. Before the tsunami, he attended to Yuli's needs, but his concern decreased after the tsunami. Yuli's mother handled almost all household activities and also Yuli's education. Azizah's parents seemed to lack the capacity to take care of her. Her mother was very permissive and could not control the girl's emotions and behaviour. Azizah was very dependent upon her mother and could not be left alone at home. In contrast, her father seemed to have a detached relationship with her. Whenever her father was at home, she went to her small room and was silent. They never communicated with each other.

4.1.2 Lambaro Skep Village

Lambaro Skep is located in the heart of Banda Aceh, three kilometres from the coastline. A large number of houses were devastated. Much of the infrastructure and many village buildings and

sources of livelihood were damaged by the tsunami. Schools, *meunasah*, roads, fishponds, and many other social facilities were destroyed. However, a few social facilities, such as the mosque, where people sought protection from the tsunami waves, remained. The damage rate in the area was approximately 80%.

Children's Exposure to the Danger

Five children, Titin (girl, 15 years), Komar (boy, 13 years), Rifa (girl, 12 years), Fira (girl, 12 years), and Amel (girl, 11 years) managed to run and reached the safety of a mosque or found shelter in one of the high buildings in the area. Many people did not manage to reach the higher floors of these buildings, because the water swept them away before they had a chance to climb the stairs. Nobody could help. People were afraid to help because the waves were very strong and contained dangerous debris. Trying to help would put a person at risk of being sucked into the water him/herself. The distance between these children and the water provided safety for them, but also put them in a terrifying situation, because they had to see people being swept away by the water, crying for help, and also dead bodies floating in the water. Upstairs, together with siblings, friends, and neighbours, they cried and prayed helplessly. They stayed in the high buildings until late afternoon, and then went down to try to find their families. They were all separated from their parents but luckily were still with siblings or other people they knew well. Although they were saved and had no injuries, they were frightened, shocked, and longing for their families.

Panji (boy, 12 years) and Kaka (boy, 11 years) could not climb the stairs of the mosque because it was already occupied by many people. Panji even fell when he tried to climb to the upper part of the mosque. These two boys ran away following a few people they knew but who were not family members, trying to find a place that was safer from the rolling and chasing waves that almost drowned them as they ran. They sustained no injuries but they saw many dead bodies in the street. Panji and Kaka were separated from both parents and siblings for several days. Nobody was informed by Jamal (boy, 11 years) about the details of his experiences, but his eldest brother knew that he was swept away by the waves when he ran. He was separated from both parents and siblings and he saw many dead bodies in the street.

Family Loss and Changes in the Structure and Relationships of the Family

All the eight children from Lambaro Skep village lost at least one caregiver. Table 4 provides information regarding family loss and changes in the family structure of the children.

Table 4. Family loss, surviving family members, new structure of the family in Lambaro Skep

Name	Lost caregivers	Lost Siblings	Number of losses	Surviving family members / new structure of the family
Titin	Mother	-	1	Titin, Komar, and Rifa were from one family. Their father survived but he was rarely at home. Their eldest sister and youngest brother also survived
Komar	Mother	-	1	
Rifa	Mother	-	1	
Fira	Father	-	1	Mother and 1 younger brother
Amel	Mother	Youngest sister	2	Her father survived but he left home soon after the tsunami. Amel lived with 2 elder brothers, 1 elder sister, and 1 younger brother.
Panji	Mother	-	1	Father, eldest brother, and youngest sister. Father remarried 3 months after the tsunami.
Kaka	Father	Youngest sister	2	His mother survived and she remarried 6 months after that.
Jamal	Both parents	1 elder sister, 1 younger brother	4	Because both parents had died, Jamal and his eldest brother lived with their uncle and aunt and their three daughters younger than Jamal. Jamal's youngest sister lived with the family of another uncle.

Jamal lost the greatest number of close relatives and suffered major changes in the family structure because both parents and two of his siblings had died. Consequently, he had to live with his uncle's family and was separated from his youngest sister. The other children lost one of their parents, but Kaka and Amel also lost one sibling in addition to one of their parents. The family structure of all these children changed, but Fira did not feel it much, because, since she was two years old, her father already lived outside the town. Just a month before the tsunami he visited his family.

Jamal's relationship with his parents and siblings before the tsunami was fairly close. His father was a policeman and his mother was a housewife with five children. After the tsunami, his relationship with his uncle's family members with whom he lived was not close, because he was not so familiar with this family. In addition, his aunt was still badly influenced by losing two girls in the tsunami. His uncle was also in a difficult situation because of the economic hardship.

Kaka lost his father, who was very close to him. He was Kaka's idol, and he looked after Kaka with much love and care. Kaka was also very close to his youngest sister. He was greatly affected by the loss of all those he had loved most. After the tsunami, he lived outside the village with his grandmother, who was also very close to him. His mother stayed in barracks in the village, so that they were separated from each other. Kaka's relationship with his mother before the tsunami was close, but not as close as his relationship with his father. After staying with his grandmother for several months, Kaka went back to the village, and soon after that, his mother decided to remarry. One of Kaka's extended family members said that Kaka did not agree with this marriage and felt very sad about it. Kaka's mother said that Kaka could not accept the presence of his stepfather.

Panji lost his mother, but his relationship with his mother was not as close as his relationship with his father. His mother easily became angry and was rather fussy, while his father was much calmer and gentler. His father remarried soon after the tsunami, and Panji did not seem to be bothered by this situation. He could communicate well with his stepmother.

Amel, Titin, Komar, and Rifa lost their mothers, who were very close to them. Their mothers looked after them with much care, and handled almost everything, including domestic chores, household finances, and the education of the children. After the tsunami their fathers could not face the loss of their wives, and acted irresponsibly. The father of Titin, Komar, and Rifa became more easily angered, often beat the children, and rarely gave them money. He also rarely came home and was more likely to spend the night at a *warung* (foodstall) or elsewhere. Amel's father abandoned the family and went to another town taking the family's television with him. What happened to Titin, Komar, and Rifa when they lived only with their father had already been predicted by their mother before the tsunami, as Titin said:

"Before the tsunami, we didn't have a good relationship with our father. He got angry easily and he often beat us when he was in a rage. However, he would not do that in mother's presence. Nobody was close to him. [...] Father used to work as a crab businessman, the owner of the family business, but since the license of this family's business was withdrawn, he seemed to be very depressed and after that he did not work and just followed and helped our mother to run the kiosk [...] We had a very close relationship with mother. She did everything [she could] to earn money for our family, [she] took care of the household, took care of the kids, helped our younger siblings in studying. When we were at home, we often talked about our experiences with mother. We told her about what happened at school and the problems we encountered. Mother did all these jobs while father often smoked, watched TV, and went out of the house [...] Once, mother said, 'if you all lived just with father, you would not survive, it would be very difficult because your father cannot handle the family and cannot earn money. He has never done anything, and now it has happened to us'" (Titin, Lambaro Skep, May, 2006)

Fira lost her father, but she was not close to him because she rarely met him as he lived in another city. Fira's mother did not remarry, and she took care of Fira and her brother with much care and attention. She did everything to support her children emotionally and financially. She paid attention to the fulfilment of their basic needs, including the education of the children.

4.1.3 Tanjong Village

Tanjong is located in Aceh Besar and close to the LhokNga beach. Its distance from the coastline is approximately two kilometres but some parts of it were protected by hills. In this village, although many houses were totally destroyed, others were only partly damaged, allowing the owners to repair them. Likewise, some public facilities were destroyed but several remained, such as the mosque and the village hall. The total damage rate was approximately 75%.

Children's Exposure to the Danger

Two children, Disa and Aning (girls, 11 years), quickly reached the second floor of their *Keuchik's* (head of the village) house. Disa was with her grandmother, her younger sister, and her aunt's family, while Aning was with her mother and siblings. From the *Keuchik's* house, they both

witnessed many people being swept away by the water, crying for help, and also dead bodies floating in the water. They sustained no injuries but suffered from shock. They were also very frightened and longing for their parent(s) and other people close to them.

Ilham (boy, 13 years) and Riska (girl, 11 years), tried to escape from the area by car, together with other neighbours and extended family members, especially mothers and children. However, the tsunami wave had destroyed many villages and so much debris was scattered on the streets that the car could not move, while the water kept coming closer to where their car was trapped. Everyone in the car got out and ran as fast as possible to the closest hill to escape from the quickly-rising water. Riska almost fell into the water but her mother helped her. Ilham was injured by a floating fence on his way up the hill. These children were lucky that they were accompanied by their relatives. Their survival, however, was an example how people nearly missed the deadly consequences of the tsunami.

Another child, Wahyu (boy, 12 years) was in even more danger because when the tsunami struck, he was on the beach with his father, trying to catch fish that were stranded on the dry seabed¹¹. Suddenly, there was a very high and dark wave speeding towards them. His father told Wahyu to run as fast as he could to the mountain while he tried to help a disabled person. Wahyu ran alone and luckily he was saved by a soldier and brought to the mountain just a few minutes before the wave swept over the place where he had been standing earlier. His father was caught by the surging water and finally had to leave the helpless victim. He swam and succeeded in reaching a tree where he was safe, but he was separated from Wahyu for one night. Wahyu was very shocked and frightened. He was reunited with his father the next day and they then walked back to their village. It turned out that the village had been largely devastated.

When the tsunami struck, Riswan (12 years) was not with his family. He ran with his neighbour but both of them were swept away by the waves. Luckily he was stuck on a roof so that he was saved. He was separated from his family, very shocked and frightened.

Family Loss and Changes in the Structure and Relationships of the Family

Three children (Aning, Riska, and Ilham) lost their father. Their mothers took care of the children as single mothers and did not remarry. Two children, Disa and Riswan, lost both parents and siblings so that they lived with the closest members of their extended families. Wahyu lost one sibling and lived with both parents. The family structures of these children changed. Disa and Riswan experienced the greatest loss and the most changes in family structure. Table 5 provides detailed information regarding family loss and changes in the family structure of the children in Tanjung village.

¹¹ A sudden receding of water from the beach is often a first sign of an upcoming tsunami. Wahyu's father apparently did not realize in what serious danger they both were.

Table 5. Family loss, surviving family members, new structure of the family in Tanjong

Name	Lost caregivers	Lost Siblings	Number of losses	Surviving family members / new structure of the family
Disa	Both parents	Eldest sister and youngest sister	4	Because both of her parents had died, Disa and her younger sister lived with their grandmother and her aunt's family, which consisted of the husband, 1 son, and 1 daughter.
Aning	Father	-	1	Mother, grandmother, and three siblings (2 elder sisters and 1 elder brother).
Riska	Father	-	1	Mother and 5 siblings (3 elder brothers and 2 elder sisters).
Ilham	Father	-	1	Mother and 1 younger brother.
Wahyu	-	Eldest brother	1	Both parents and 1 elder brother.
Riswan	Both parents	All siblings (2 elder sisters and 1 younger brother)	5	Because both parents had died, Riswan lived with his uncle's family, with his aunt and four male cousins.

Wahyu lost his closest family member i.e. his eldest brother, who was very close and very kind to him. His brother was also very close to other family members, and therefore Wahyu's parents were also deeply affected by the loss of their eldest son. They could not accept his death and this made it harder for Wahyu to accept the loss. Fortunately, both parents were very attentive and took care of Wahyu in a caring and gentle way.

Ilham had a close relationship with both parents, but was closest to his mother, who attended to him with great devotion. After the tsunami, his mother looked after him with much care and attention but she still had difficulties in accepting the death of her husband. It aggravated Ilham's difficulties in accepting his father's death, too.

Riska was very close to her father, even closer than to her mother. Her father lavished much attention upon her and tended to give her what she wanted. After the tsunami, her mother looked after Riska with much devotion, and her elder siblings also helped their mother to take care of Riska, the youngest child at home.

Aning was fairly close to her father and closer to her mother even though the overall atmosphere in this family was rather 'cold'. Before the tsunami, Aning's father rarely spent time with his family, but at times he took all family members to another island in his speedboat, in which they spent an enjoyable time together. Her mother was not a warm person, and after the tsunami she forbade her children to express their sadness and other negative emotions regarding the tsunami and the loss of their father, on the ground that it was not good for their father's peace after death. However, she ardently supported her children's education.

Compared to Disa, Riswan suffered greater loss and change in the family structure for several reasons. First, the relationships of Disa and Riswan with their own parents before and after the

tsunami were very different. Before the tsunami, Riswan was very close to both parents and they were likely to lavish ‘too’ much love and attention upon him. He was the first son after two of his sisters were born. Before that, his parents were longing for a boy in the family. Therefore, he was treated like a king, and all his wishes were fulfilled. His younger brother and his elder sisters were not treated like him. In contrast, Dian’s relationship with her parents, especially with her mother, was not so close. Her mother very easily became angry and she used to reprimand and beat her children. Disa’s father had long been ill; he was paralyzed and so he was in bed all the time. Disa liked to take care of her father, and she was closer to him than to her mother. Second, after the tsunami, Disa lived with her grandmother, and was very close to her, even closer than to her mother because her grandmother had taken care of Disa since her childhood. Before the tsunami, Disa often spent the night at her grandmother’s house, and when the tsunami struck, Disa was in her grandmother’s house, which was near to that of her parents. Riswan lived with his uncle’s family, who were not as close to him as his own family; and the uncle had four sons at home so that he was not treated as a special person. However, among all extended family members who survived the tsunami, his uncle’s family consisted of his closest extended family members. Third, Disa still had one sibling who was also close to her, while Riswan no longer had any siblings.

4.1.4 Lampineung Village

Lampineung is one of the villages located along the road to the port of Malahayati in Aceh Besar district. Before the tsunami, its distance from the coastline was one kilometre but after the tsunami the distance was only 800 metres across flat land. The village was one of the areas most devastated by the tsunami. Almost nothing was left in this highly populated community. Most infrastructure and sources of livelihood were destroyed. Schools, *meunasah*, roads, the village health centre, and many other public facilities were devastated. The damage rate for infrastructure and housing was approximately 90%¹².

Children’s Exposure to the Danger

When the villagers heard about the approach of the tsunami, Deri (boy, 10 years), who had always lived with his parents and extended family in this village, climbed on a motorcycle with his uncle to escape the tsunami. However, because the street was blocked by motor vehicles, his uncle decided to dismount and run, but there were no high buildings nearby. The water came closer and almost caught them, but they managed to climb a mango tree. Deri stayed in the tree until the water receded. Deri did not drown and he sustained no injuries, but he was very close to the oncoming water and was in immediate danger. From the tree, Deri saw many dead bodies floating in the water, and

¹² Data about the approximate rate of each village’s destruction were gathered from interviews with local leaders and the children’s mentor from each village.

also many individuals struggling to save themselves. He also saw the water reddened by blood. He was very frightened and shocked by all the things he saw. He was reunited with his father in the evening, but his mother had died.

Three children from Lampineung, Fati (boy, 10 years), Andi (boy, 10 years), and Rini (girl, 12 years) were swept away by the waves as they tried to escape. The tsunami struck Aceh in three consecutive waves. Fati and Andi were swept along by all three of the waves, while Rini was caught by the third wave but only briefly. They all managed to get out of the water. They were all injured because of the debris carried along by the wave. They saw the water shoving and dragging away people and things, and they were separated from their parents. Only Rini was with her siblings.

Fati's story about what happened to him during the tsunami:

"..... (at first) My family ran together. [but then] I turned left and went towards Perumnas [name of place there]. Father ran straight to Cok Al's house [high building]. Mother ran with father and two of my younger brothers. My eldest sister was in another village to study the Koran. So then I was alone..... the first wave overtook me when I was running close to a mango tree. I was under the water until I reached his father's factory [pointing to Deri, whose father owned a brick factory]. There I got caught in a wire fence. My head was stuck in the fence and it hurt here [pointing to his neck]. The water receded for a moment so I pulled the wire fence from my neck and tried to run again. But the water rose up again, and the second wave caught me once again and took me as far as Perumnas. Before I had a chance to run, the third wave took me again and then I was stuck on someone's roof. During the third wave, I floated, [I did] not drown. The first and second waves were worse than the third, because I was underwater and got hurt on the fence.....' (Fati, Lampineung, July 2009).

Family Loss and Changes in the Structure and Relationships of the Family

All children in Lampineung suffered significant loss of their caregiver(s) and other family members. Deri lost his mother and youngest sister, with whom he had very close relationships. Andi lost his father, who was very close to him, and his younger sister also died during the tsunami. Rini lost her mother while her father died a year before the tsunami. She was very close to both parents. Fati suffered the greatest loss because all his family members died. All these children lost their closest family members. Table 6 provides detailed information regarding family loss and changes in the family structure of the children in Lampineung village.

Table 6. Family loss, surviving family members, new structure of the family in Lampineung

Name	Lost caregivers	Lost siblings	Number of losses	Surviving family members / new structure of the family
Deri	Mother	Youngest sister	2	His father and eldest brother survived. His father remarried.
Fati	Both parents	All siblings (eldest sister, 2 younger brothers)	4	Because both of his parents had died, Fati lived with his uncle, aunt, an elder male cousin and a female cousin.
Andi	Father	Youngest sister	2	Andi lived with his mother and 2 uncles (younger brothers of his mother).
Rini	Mother (Father died a year before the tsunami)	-	2	Because both parents had died, Rini and her siblings lived with their aunt (her mother's elder sister) and uncle.

In addition to the loss of the closest family members, all these children also experienced significant changes in the family structure and in the quality of their relationship with their caregivers. Deri's father remarried and Deri could not accept his stepmother. His relationship with his father and stepmother turned bad and Deri became rebellious towards them. Andi's mother took care of Andi as a single mother, but their relationship deteriorated because they both had difficulties in accepting the death of those whom they loved very much. They fought with each other very often. Rini lived with all her siblings, but her aunt and uncle regularly helped in taking care of them. They lived on another island (Sabang) and visited Rini and her siblings at the barracks every month. They usually stayed there for two weeks or more, but several times they stayed away for more than a month. Fati lived with his uncle's family but the situation in the new family was very different from that of his own family. The new family consisted of adults and they all took care of him with discipline. They provided guidance and also monitored Fati regularly in his studying and praying. Fati had not received such treatment when he was with his own family.

Even though Fati lost all his family members, his degree of loss was comparable with Andi's. This is because Fati's relationship with his family before and after the tsunami was very different from Andi's. Before the tsunami Fati was not so close to his parents and siblings. His father used violence to discipline him and his mother did not pay enough attention because she was busy with the two younger children. His female cousin said:

"Fati was not close to his father. He was afraid of his father. [...] Fati's father did not talk much; he usually beat him. Fati was usually hit for making mistakes. Among the children, he was the only one who received violent punishment from his father". (Fati's female cousin, Lampineung, May, 2006)

In contrast, Andi was very close to his father, who 'spoiled' him. His father was his idol and his closest family member. As Andi's mother said:

"From when Andi was very young, he was so close to his father and had been spoiled by him. When his father was at home (he often travelled) he gave all his attention to Andi, such as helping him with his study, preparing him for the night e.g. washing his feet, massaging, and covering Andi with a blanket before he slept. He taught him the Koran".

Andi's relationship with his mother had been only fairly close prior to the tsunami. His mother had loved her youngest daughter more. After the tsunami, Andi's mother was very depressed as a result of losing her beloved husband and youngest daughter. Andi's relationship with his mother deteriorated. They often fought and Andi's mother was often angry and sometimes neglected him.

On the other hand, after the tsunami, Fati was rather close to his uncle. His uncle tried to accommodate and provide what the boy needed and asked. He was more pleasant than Fati's own father, but his uncle also beat him occasionally, especially when Fati forgot the prayer time and was absorbed in just playing with his peers. Fati was not close to his aunt because his aunt was so forthright when she said something. Sometimes she also beat him. Fati was quite close to his older female cousin, who taught Fati academic lessons and also Koran-reading. Fati was also close to his older male cousin because he was gentler and never beat him.

4.1.5 Threat and Support from Personal Traumatic Experiences Caused by the Tsunami

On the basis of the above descriptions, we may conclude that all child participants experienced a very dangerous and terrifying situation during the tsunami even though the form of danger was sometimes different among them. Eleven children: four from Terbeh (Mariana, Yuli, Hanum, and Azizah); five from Lambaro Skep (Fira, Amel, Titin, Komar, and Rifa), and two from Tanjong (Disa and Aning) managed to run and quickly reach higher areas such as the mountain area, the upper part of houses, multiple-storied buildings, or mosques and they were safe from the waves. They also sustained no injuries.

Six children: Panji and Kaka from Lambaro Skep; Ilham, Riska, and Wahyu from Tanjong; and Deri from Lampineung were very close to the oncoming water and were in immediate danger of drowning. Five children: three from Lampineung (Rini, Fati, and Andi), one from Tanjong (Riswan), and one from Lambaro Skep (Jamal) experienced severe danger and were swept along by the waves.

After the tsunami, all the children (except Azizah) were separated from at least one of their parents. Several children were even separated from all members of their families (Panji, Kaka, Jamal, Riswan, Fati, and Andi) for more than one day. Most children were in an anxious, shocked, and frightened condition.

Regarding the family loss and changes in the structure and relationships in the family, we found that there were several changes in the relationship of the children with their caregiver(s) after the tsunami, with relationships sometimes deteriorating and sometimes improving, resulting in negative relationships for eleven children, mixed relationships for five, and supportive relationships for six children. Five children (Andi from Lampineung; Komar, Rifa, and Titin from Lambaro Skep; and Riswan from Tanjong) had closer relationships with their caregiver(s) before the tsunami compared to their relationship with caregiver(s) afterwards. Before the tsunami, their parent(s) were warm and supportive (Andi's and Riswan's parents even spoiled them), but the parent(s) died during the disaster. After the tsunami, they were taken care of by (other) caregiver(s) with whom they did not

have close relationships and who proved to be even more abusive than their parents had been. Two children, Kaka from Lambaro Skep and Deri from Lampineung, lost their closest caregiver who was warm and supportive. After the tsunami, they lived with one parent who was caring for them, but the parent did not consider the child's feelings when deciding to remarry. These children experienced a 'threatening' situation in the form of a new parent (stepfather or stepmother). Neither of them was ready to live with a new parent because their grief and traumatic reactions caused by the loss of their closest caregiver had not been fully overcome. Two children from Tanjong (Wahyu and Arief) still had their closest parent(s), who were warm and supportive to them. However, their parent(s) were depressed after losing their loved one. Jamal from Lambaro Skep also lived with caregivers (his aunt and uncle), who were depressed after losing their daughters in the tsunami. One child (Azizah from Terbeh) had experienced an inconsistent pattern of child-rearing before and after the tsunami. Her mother was very permissive while her father was emotionally detached from her. All these eleven children were in danger of suffering negative impacts that could affect their trauma recovery and adaptation processes after the tsunami.

Five children (Aning from Tanjong, Amel and Panji from Lambaro Skep, Rini from Lampineung, and Fera from Terbeh), also experienced 'threatening' conditions after the tsunami concerning family relationships, but the degree of threat was not as high for them as for the eleven children mentioned before. In addition, these five children still had at least one caregiver who showed care and support for them.

Other children experienced more positive relationships with their caregiver(s) after the tsunami. Two children, Disa from Tanjong and Fati from Lampineung, had more 'problematic' relationships with their caregiver(s) before the tsunami because one or both of their parents was abusive. Their parent(s) neglected their children or used physical and emotional violence to discipline them. Disa and Fati lost both parents. After the tsunami, they lived with caregivers (their extended family) who showed care and attention and could monitor and guide them in a more appropriate way than their own parents. Four children, Fira from Lambaro Skep, Mariana and Hanum from Terbeh, and Sri from Tanjong, lived with parent(s) who were very supportive and warm. So, in total six children were in a situation that had the potential to promote their trauma recovery and adaptation process after the tsunami.

4.2 Traumatic Grief Reactions, Recovery, and Changes in Individuals' Behaviour

In this study, all child participants experienced an on-site/first-hand traumatic event because they were direct victims of the tsunami. The tsunami was not a single (Type 1) traumatic event for these children, because, prior to the tsunami, they had already often witnessed the violence of the prolonged armed conflict in Aceh. Moreover, following the tsunami, there were frequent earthquakes.

Given these circumstances, we concluded that the children experienced recurring (Type 2) traumatic events.

After the tsunami, children developed various forms of trauma reactions and these trauma reactions could last for varying periods of time. This study investigated the form and intensity of the traumatic grief reactions of the children immediately after the tsunami, the decrease in their daily functioning, what the point of recovery was, and what contributed to the recovery process. In addition, this study also explores the changes of individuals' characteristics after the tsunami. According to Bronfenbrenner and Morris (1998), individuals' characteristics are considered to be important factors that contribute to the way in which children deal with stress and interact with their environment.

Recovery was assessed with regard to the time when the intensity of the symptoms started to decrease and the children's emotions and behaviour were improving. The changes in individuals' behaviour were assessed according to the differences in the children's behaviour before and after the tsunami. Information for this section was elicited through interviews with parents, siblings, extended family members, and social workers in the community.

All children who participated in the study grieved and showed traumatic reactions immediately after the tsunami, such as continuous crying with hysterical reactions and other signs of trauma (shock, emotional numbing, fear, anxiety) especially during the first few days and the following weeks, sometimes months. They were very shocked and could hardly believe what had happened to them, especially the sudden and catastrophic loss of family members. Most of them were terrified by the earth tremors that occurred frequently after the tsunami. Since the tsunami happened during the monsoon season, violent rainstorms became part of their daily experience, which reminded them of the traumatic event. Most of the children felt very insecure and were afraid that another tsunami might occur.

4.2.1 Terbeh Village

Mariana (girl, 12 years) screamed hysterically whenever she remembered her brothers and grandmother who died, especially her youngest brother, who was 18 months old when the tsunami struck. She used to take care of her youngest brother. She had a seizure several times, after which she passed out. She cried frequently, was depressed, passive, and unhappy for more than three months. Soon after the tsunami, she was taken to Sabang Island and there she was involved at school, but sometimes she refused to go to school. She also did not become much involved with her new friends. Before the tsunami, she was very cheerful, active, eager to learn new things, diligent, and calm, and did not react negatively in facing her daily problems. After two months, together with other refugees from Pulo Aceh, they were brought to high ground in Aceh Besar, and there they moved from one camp to another until they finally stayed in a camp in Terbeh. Mariana became more cheerful four months after the tsunami, after joining the traditional dance practices conducted by an aid

organization. After that, she was willing to become involved in other traditional dance activities provided by two NGOs that stayed longer in Terbeh camps: PKPA (*Pusat Kajian dan Perlindungan Anak*: Centre for Study and Child Protection) and UNICEF Children's Centre. Through these activities, her mood gradually improved. She started to show her previous character and behaviour as a cheerful, sociable, diligent, active, and enthusiastic child.

Azizah (girl, 12 years) grieved deeply for her elder sister and her sister's baby. She was very close to her sister and the child. She frequently cried and was very shocked and frightened. It was reported, however, that even before the tsunami she was passive, withdrawn, uninterested in social relationships with other people, and sad-looking. She was easily angered or became sulky when her mother did not grant her wishes. After the tsunami, her passive behaviour became even worse. She cried very often, looked very depressed, withdrew from peers, and day-dreamed frequently. She was also easily frightened and did not want to stay far from her mother. Her mother said that Azizah had not recovered from her grief, sadness, and anxiety resulting from the tsunami, and therefore her trauma reactions persisted for more than one year.

Yuli (girl, 13 years) showed hysterical reactions with much crying for her eldest sister and toddler brother. She mourned, cried frequently, and looked very sad. The crying lessened after two months, when she met new friends whom she liked and with whom she could play in the camp. Her new friends made her happier and she became more cheerful than two months before. Basically she was a kind person, but her behaviour was likely to be much influenced by her peers. When she had a close friend who was kind and sociable, she was able to act in a pleasant and kind way to friends in general, but if she had a selfish and boastful friend, she also acted boastfully and egoistically, and was only kind towards certain friends. Before and after the tsunami, she very often showed her disappointment or was angry when things did not go as she wished.

Hanum (girl, 15 years) cried frequently during the first two weeks. She still cried whenever she remembered her elder brother who died, but the intensity of her crying lessened after a month, when she met an old friend in the camps. She was a cheerful, enthusiastic, kind and dutiful girl before and after the tsunami, but she also had a tendency to become irritable, especially when she was not in a good mood.

4.2.2 Lambaro Skep Village

Fira (girl, 12 years) lost her father but because she did not have a close relationship with him, she did not cry very much. Within a week she ceased to cry at all. On the day of the tsunami, when she met her mother, brother, and extended family members, she was even able to encourage them to become calmer and stronger. When continual earthquakes happened, she felt anxious but she was able to support her mother and sometimes reminded her mother and brother to take particular actions when they were panicking. She was happier when she went back to the village and stayed in the barracks, because she met many of her friends, and there were various activities conducted by international and

national NGOs to support her recovery from trauma reactions. Fira was energetic, sociable, active, and enthusiastic before the tsunami, and after the tsunami, she showed even more positive behaviour. She became involved in various activities of the psychosocial programs and became the leader of the children in the barracks. She very much enjoyed being in the barracks with her friends and extended family.

Titin (girl, 15 years), Komar (boy, 13 years), and Rifa (girl, 12 years) frequently cried during the first two weeks. They grieved for their beloved mother and were very shocked by the tsunami. Komar and Rifa cried hysterically very often, while Titin could control her crying. A week after the tsunami, they were taken to the house of their aunt in Medan. During their first week in Medan, Komar and Rifa easily cried aloud whenever they remembered their mother or were reminded about the tsunami. The aunt and her family in Medan showed support and often entertained the children to make them happier. In less than a month, Titin's crying lessened. However, the situation was worse for Komar and Rifa, because they had to be separated from their siblings. They were taken to other members of their extended family in another city in South Aceh, because this family wanted to take care of them. Unfortunately, Komar and Rifa did not like being there because they did not have a close relationship with this family, and they had to work hard helping with domestic chores. The family did not provide as much support for Komar and Rifa as they had received when they were in Medan.

With regard to their individual characteristics, before the tsunami Titin was an active and enthusiastic girl. She was eager to learn new things. She was also cheerful and independent, but she was rather selfish and was easily angered. After the tsunami, she still showed enthusiasm and was still sociable (towards certain people that she liked), but she was perceived by her siblings as becoming more egoistic, very easily angered, and not so cooperative especially in handling domestic chores. Komar was basically also easily angered, but before the tsunami he used to obey his mother (but not his father or siblings). He was an independent child who did not interact intensively with people even though he was basically a kind person. After the tsunami, his negative characteristics were shaped in a more intensive way; he was very easily angered and was not obedient towards anyone. He had difficulties in maintaining friendships because of his irritable characteristics. Rifa was a cheerful, friendly, and agile girl. She was able to show care to her siblings and was enthusiastic to know more about many things. However, she was irritable and sometimes greedy for attention from others, especially from her mother. After the tsunami, she was still friendly and cheerful, but she was very demanding towards adults and sought more attention. Other changes in her behaviour were related to her way of choosing friends. She did not play with friends of her own age, but she had many friends far below her age, such as children from five to nine years old. She also behaved like those children; for example, she only wore underwear, despite being twelve years old. It seemed that she experienced regression as an impact of the tsunami.

Amel (girl, 11 years) cried frequently because she had lost her mother and youngest sister. She was very grieved, sad, and shocked. Amel and all her siblings were taken to their aunt's house in another district and there she often cried. Her overt crying lasted around a month, and after that she tried not to be noticed by anyone while crying. She tried to show other people that she was strong, but she looked depressed. This behaviour disappeared after her family moved back to Lambaro Skep and Amel met her close friends in the barracks. It was around four months after the tsunami. Before the tsunami, Amel was perceived by her eldest sister as a pampered and egoistic girl who easily became angry. She also did not care about domestic chores. However, after the tsunami, her behaviour became much better. She cared about domestic chores, was more kind and obedient towards her eldest sister, and was more independent.

Panji (boy, 12 years) cried a lot and became very frightened. He showed panic reactions when experiencing certain things that reminded him of the tsunami, such as the sound of cars or trucks passing on the street, or a loud noise caused by a rainstorm, or when there was an earthquake. He looked gloomy and unhappy for about three months. He started to be happier and could smile after meeting his friends at the barracks and became involved in many activities provided by the NGOs, especially traditional dance activities. Panji was a friendly, kind, polite, and obedient boy, but he was rather taciturn and shy. After the tsunami, his characteristics were not much changed, but he easily panicked and became very anxious when something triggered memories of the tsunami.

Kaka (boy, 11 years) was very depressed as a result of losing his father and youngest sister, to whom he was very close. He cried a lot and refused to stay in the village to avoid being reminded of the tsunami and its impact. He was also very afraid of another tsunami. He stayed at his grandmother's house, which was located on high ground outside Banda Aceh, and was separated from his mother, who had to return to the village soon to be able to benefit from the special facilities provided for tsunami-survivors. In his grandmother's house, he cried and looked very sad but after less than three months he felt better because very soon after the tsunami he became involved again in school activities and other 'normal' activities (praying, reading the Koran, and playing with friends). He moved back to the barracks at the village six months after the tsunami, and he looked happier when he met his friends and was involved in traditional dance activities provided by NGOs. However, when his mother remarried, he often looked sad and day-dreamed. Kaka was basically sociable, kind, obedient, enthusiastic, and calm. After the tsunami, all these characteristics persisted but he became far less obedient towards his mother than before.

Jamal (boy, 11 years) looked very gloomy, passive, and very silent, and very often day-dreamed. The grief he felt after the loss of both parents and two siblings was combined with depression, anger, and a mild form of dissociation. Before the tsunami, he was rather obedient and sociable, but after the tsunami he withdrew from his peers, became very silent, and tended to be

passive aggressive¹³ towards his uncle and aunt, with whom he lived. His sadness, anger, and grief persisted for more than a year after the tsunami. He had difficulties in the adaptation process because he had to live in new circumstances (new village and new family), but his trauma reactions had never been addressed because his caregivers were also in a depressed state.

4.2.3 Tanjong Village

Disa (girl, 11 years) cried frequently, mostly hysterically, longing for both parents and sisters. She became less hysterical about two weeks after the tsunami when she had stayed at their relative's house outside the village for several days. There she met many friends and members of her extended family, so that she was able to forget her sadness and be happier. However, after she moved back to the village, she started crying whenever she remembered or was reminded about the tsunami and her deceased family members. Her sadness gradually decreased when she was involved in many psychosocial programs conducted by NGOs and also programs developed in the community by *ustadz* and *ustadzah* of the village. Disa's characteristics before and after the tsunami were very different. Before the tsunami, she was a very shy girl and she was not actively involved in Koran-reading activities in the community. Her mother often prevented her involvement in such activities because she had to help her with domestic chores. After the tsunami, very surprisingly, she showed remarkable proficiency in many activities and competitions that she joined. She also actively participated in various programs conducted in the village. Gradually she became one of the leaders of her peers.

Riswan (boy, 12 years) suffered severe grief because he had lost members of his nuclear family. He often cried and sometimes in a very hysterical way, longing for his family. He was separated from his extended family for more than a month, and when they found him, he was still very grief-stricken and depressed. However, after the dead bodies of his parents and sister were found two months after the tsunami, he started to calm down and did not cry much any longer. In addition, he was able to play with many friends in the village because one of his uncle's children was of the same age, and thus he could join with him and his peers. They both (Riswan and his cousin) actively participated in the various activities provided by the NGOs in the village. Riswan was basically sociable and friendly, and therefore, after the tsunami he easily engaged with new friends. He was even able to act as a leader for them. Before the tsunami, his parents were likely to lavish 'too much' love and attention on him. He was obedient towards his parents but he was also rather egoistic and dominant towards his siblings. In the family, his wishes had to be fulfilled. When his parents had died, it was rather difficult for Riswan to adjust to a new family and new caregivers, especially because his aunt treated him like other boys at home, and there was no 'special treatment' for him. This condition

¹³ Passive aggressive behavior is characterized by the expression of aggressiveness in a passive way, such as by procrastination, stubbornness, or inefficiency when instructed to do something. It is a rather common behaviour in Indonesian culture to express disappointment or disagreement not in a verbally confronting way but in a silent / passive way.

made him upset and frustrated. His behaviour changed much after the tsunami. He had difficulties in obeying his aunt's commands and he started to become involved in behaviours that were considered negative or 'risky' by the village members, such as motor-cycle racing and smoking.

Riska and Aning (girls, 11 years) did not cry during the first two days, but they started to cry when they found out that their father had died. After that, Riska became easily frightened. She had no courage to go anywhere on her own. She was very sad but she tried to control or repress her sadness. However, she could not hide her fears and anxieties and she became very dependent. She had to be accompanied if she went anywhere. Things that made her happier were meeting with her friends and being involved in traditional dance activities in the village. Riska was cheerful, sociable, and obedient before the tsunami. After the tsunami, she was less cheerful and less obedient. She was also easily irritated. Aning was quieter (she secretly cried in bed). She repressed her emotions because her mother forbade her to cry and told her that her crying could disturb her deceased father's peace. Aning was basically a kind person, enthusiastic, friendly, and independent. After the tsunami, she still showed those qualities, but looked unhappy. She showed enthusiasm and was cooperative towards adults outside the family, such as social workers and teachers.

Ilham (boy, 13 years) showed sadness and grief mixed with guilt feelings for leaving his father behind during the tsunami. He had difficulty in accepting the death of his father. The sadness and guilt persisted for more than a year. Because the body of Ilham's father was not found, he and his mother went several times to places where people said that they had seen someone who looked like Ilham's father, but without any result. Ilham very often day-dreamed, showed much anxiety, and was easily frightened; he often panicked during a rainstorm. He was an obedient and polite boy both before and after the tsunami. He was also kind and friendly, but a little shy. His behaviour after the tsunami did not differ much from his behaviour before the tsunami.

Wahyu (boy, 12 years) showed grieving, depression, and a mild form of dissociation mixed with a moderate level of anxiety. He often day-dreamed. His mind seemed to 'go blank' and he became easily frightened. Whenever there was a rainstorm or an earthquake, he immediately ran to his mother. He had difficulty accepting the death of his eldest brother. He cried almost every day for more than a year, and so did his mother. As the body of Wahyu's brother was not found, the family tried hard to find him in various districts and cities, but without result. Wahyu was a loyal and obedient child both before and after the tsunami. He tried to soothe his parents' emotions. He was also kind and friendly. His behaviour after the tsunami did not differ much from his behaviour before the tsunami, but he sometimes played alone and day-dreamed.

4.2.4 Lampineung Village

Fati (boy, 10 years) had lost all the members of his family, but he did not cry at all. He had a life-threatening experience, but was quite surprised to find himself safe after that. He was very pensive during the first few weeks after the tsunami, especially when he was taken to Sabang and

stayed there for about two months. He told people about his experiences without emotion. It seemed that he experienced emotional numbness, as he did not want to talk about his feelings to anyone for more than a year. He was more cheerful when he went back to the village and lived at the barracks, meeting his old friends. Fati was basically a kind and cheerful child, but because his parents very often punished him violently, he was disobedient towards them. His behaviour before and after the tsunami was different. After the tsunami, he was more obedient and diligent in his prayers and study.

Andi (boy, 10 years) showed sadness and grief mixed with guilt feelings for leaving his father behind during the tsunami. He had difficulty in accepting his father's death. The sadness and guilt persisted for more than a year. Andi showed severe grief and feelings of guilt. He also very often became extremely angry, especially towards his mother. Since Andi's mother was also distressed, they often verbally abused each other. His mother said that Andi had still not recovered, and his emotions and behaviour got worse and worse. Whereas before the tsunami he obeyed his father, was diligent in praying and studying, and friendly, after the tsunami he was disobedient and did not want to be involved in prayer and study.

Deri (boy, 10 years) showed grieving, mixed with a high level of anxiety. For several weeks he cried hysterically every day because he had lost his mother and youngest sister. He was very frightened and shocked by all the things that had happened to him during the tsunami. He would run in panic when earthquakes or storms occurred. Deri's behaviour and emotions were better after four months, after he met some of his old friends in the village. One by one, his friends came back to the village and eventually Deri began to be more cheerful. Before the tsunami, he was obstinate, insisting that his parents must fulfil his demands; otherwise he would be angry or sulky. Deri's parents were too attentive to his desires and were too protective and spoiled him. Sometimes they had difficulty in controlling him. He was also a cheerful child and had many friends. When his father decided to remarry, Deri was very upset and anxious about having a stepmother, and he started to rebel and became very difficult for his caregivers to control.

Rini (girl, 12 years) mourned her mother every day for more than a month. She was also traumatized by the wave that almost swept her and her younger siblings away. She often cried but tried not to be noticed by anyone while crying. After a month, she sometimes cried, but she usually cried alone, far from other people. She tried to show to other people that she was strong, but she looked unhappy. Rini's condition had improved several months after the tsunami after she had a dream about her mother talking to her. She was better after she went back to her village and met her old friends. She also met one close neighbour, who showed her and her siblings care and attention as they faced their daily lives. Eventually, she became more cheerful. Before and after the tsunami, Rini was diligent in studying, praying, Koran-reading, and helping with domestic work. She was eager to learn new things, cared for younger children, and was polite, obedient, responsible, helpful, and kind.

On the basis of the above descriptions, we observed that the duration of the symptoms varied. Several children had the symptoms for a short period (less than a month); other children had the symptoms longer but for less than three months, and several others had the symptoms for more than three months. The sources of recovery also varied: several children started to improve apparently because they were involved in psychosocial programs, other children because they met their friends in the village or in the camps, and several others because of the comfort provided by their extended families.

We also learned that the traumatic grief reactions of these children soon after the tsunami varied. One child, Fira from Lambaro Skep, showed mild traumatic grief reactions and very soon after the tsunami she did not cry at all. Two children (Hanum from Terbeh and Titin from Lambaro Skep) showed grief and sadness but they were able to control their crying. The crying lessened within a month, and they did not have difficulty in maintaining their daily functioning; for example, they continued to play with friends and helped with domestic chores.

Seven children (Yuli from Terbeh; Rini from Lampineung; Aning, Riska, and Disa from Tanjong; Panji and Kaka from Lambaro Skep) showed moderate traumatic grief reactions and their daily functioning was not much disturbed. Even though they felt sad and depressed, they were able to take part in school activities, play with new friends, or help with domestic chores.

Twelve children (Mariana and Azizah from Terbeh; Komar, Rifa, Amel, and Jamal from Lambaro Skep; Riswan, Wahyu, and Ilham from Tanjong; Fati, Deri, and Andi from Lampineung) showed severe traumatic grief reactions, and their daily functioning was much disrupted.

4.3 Post-tsunami Housing, Financial, and Psychosocial Aspects in the Villages

Children's development is influenced by the conditions of their physical and psychosocial environment. The physical conditions in the villages in Aceh were obviously worse after than before the tsunami, posing a considerable challenge to the children. The shelters, water, and sanitation until one year after the tsunami were substandard, especially with regard to hygiene and protection from bad weather.

The overall housing and financial conditions of the participating families were also negatively impacted. Survivors in general suffered bad or uncomfortable housing conditions and had a low income, even though there were also people who had a modest income and more comfortable housing conditions. The government had a policy of supporting each family with a very small monthly allowance, Rp. 90.000 (\pm US\$ 9) for each family member. Even so, the payment of the money was not regular and was very often delayed for several months. All these conditions had an important influence on the degree of comfort (or discomfort) the children experienced in their daily lives. Moreover, the distance of the new settlements from the shoreline and the absence of physical barriers

(hills, trees, and high buildings) between the new location and the shoreline could stimulate fear or anxiety about future tsunamis.

Regarding psychosocial aspects, we focus on psychosocial programs for the children in the four villages and relationships with peers. Friends are very important sources of comfort for children and adolescents. After the tsunami, many children were separated from their friends because they moved from the village and stayed with their extended families, living out of town or on another island. This might have aggravated the situation for some children because they could not meet and play with their friends after experiencing such a disastrous event. Returning to the village could make children happy if it enabled them to reunite with friends, but it could also make them sad if it highlighted the loss of a friend who died during the tsunami.

As described in Chapter 2, after the tsunami, hundreds of aid institutions came and implemented programs in Aceh. Among them were various institutions that provided psychosocial activities for children in the community. The presence of these psychosocial activities was also important to provide the children with more opportunities to receive essential support in their recovery process through playing together with friends, releasing their negative emotions through enjoyable activities, and having a supportive adult mentor.

With regard to the physical conditions of the community, we assessed the overall housing and financial conditions of the community and the participating families, and the distance of the new settlement from the shoreline that might stimulate fear of future tsunamis. Regarding the psychosocial aspects, we assessed peers' situation and relationships among peers after the tsunami, the type, intensity, and duration of psychosocial programs that were implemented for children, and the relationships between the children and social workers in the community. The information was gathered from interviews with parents, leaders, and other people in the community, and also through observation by the researcher's team.

Table 7 provides information regarding the conditions of the housing and psychosocial programs for the children in the four villages. Regarding the housing, it includes information about the general conditions of the shelters regarding the space, water, and sanitation. With regard to the psychosocial programs for the children, it includes the intensity, duration, forms of activities, and the relationships that were developed with social workers.

Table 7. Housing Conditions and Psychosocial Programs for the Children in each Village

Aspects	Terbeh	Lambaro Skep	Tanjong	Lampineung
Housing Conditions				
General housing conditions (space, water, & sanitation)	Very small and leaking tents, problems with water and sanitation. For every 20 tents there were 2 toilets and 2 bathrooms. The tents were 3 x 5 meters and occupied by at least 3 people.	Barracks in general were comparatively clean with good water supply and sanitation. For every 10 rooms there was 1 toilet and 1 bathroom. A room was 3 x 5 meters, and occupied by at least 3 people.	Houses were more spacious, comfortable, and clean. A toilet and a bathroom were inside each house. A house consisted of separate rooms.	Dirty barracks, lack of clean water and sanitation. Rooms were 3 x 5 meters, occupied by at least 3 people. For every 20 rooms there were 2 toilets and 2 bathrooms.
Psychosocial programs for the children				
Organizations, duration, and intensity of the programs	UNICEF Children's Centre: 7 days a week (open more than 6 hours per day). PKPA (Centre for Study and Child Protection): 3 days a week, 2 hours per visit. Care International Indonesia: assistance for mothers, but sometimes also for children: not regularly.	Taloe (a local NGO): 3 times a week, 2 hours per visit. Care International Indonesia: once a week. Save the Children: once a week.	TPA (Koran-reading centre) managed by local Ustadzah and Ustadz): 3 times a week, 2 hours per session. In collaboration with many NGOs: Care International Indonesia, Helen Keller, etc.	SEFA (a local NGO): once a week: 1.5 hours per visit. Taloe did not continue to assist children in this village because of the limited participation of children.
Forms of activities	Various activities and programs: education, traditional dance and music, computer, English lessons, handicraft, etc.	Traditional dance and music, games, handicraft.	Religious activities, educational programs, traditional dance and music, games, handicraft.	Educational programs.
Relationships between children and social workers	Social workers had a close relationship with the children because they stayed in the community almost every day.	Social workers had a close relationship with the children because they actively engaged in the community and often visited children in the shelters to encourage their participation.	The ustadz and ustadzah had a close relationship with the children because the children were already familiar with them and these social workers actively encouraged the children to participate.	The relationship was not close because they met only briefly once a week.

4.3.1 Terbeh Village

Housing and Financial Conditions

In Terbeh, the condition of the tents and also the water and sanitation were bad. Following rainstorms, which occurred frequently, many tents were damaged and began to leak. The tents were very hot at noon and very cold at night. However, the children in Terbeh did not worry as much about the possibility of another tsunami since Terbeh is located up in the hills.

All participants from Terbeh (Mariana, Yuli, Hanum, and Azizah) lived in uncomfortable tents (see Figure 2) and their parents had an unstable and small income. The income of the parents was low because they had difficulty in getting a permanent and decently paid job. The new relocation place was in the mountains rather than next to the sea, which made it very difficult for parents to acquire or keep jobs because their skills and knowledge did not fit the new environment. Parents only worked temporarily as manual workers and had a small income. As these children still had both parents, these families did not receive extra income from the orphans' fund.



Figure 2. Tents in Terbeh camps more than a year after the tsunami

Psychosocial Programs

Terbeh had the most intensive and varied programs. Three children from Terbeh (Mariana, Yuli, and Hanum) participated intensively in the psychosocial activities and they gained many advantages from the availability of the UNICEF Children's Centre and PKPA in the village. Moreover, they had a close relationship with the social workers, who were friendly and patient, so that they liked to participate and came to the centre as much as possible. One child, Azizah, did not participate in the programs at all.

Peers' Situation

The peers' situation in Terbeh was different from the peers' situation in their original villages (Pulo Aceh). In the new village, they had many new friends from various places that had been

devastated by the tsunami. Many children did not know each other and they tended to form groups according to their village of origin. Fortunately, the availability of the UNICEF Children's Centre helped them to form closer relationships, especially for children who joined the psychosocial programs. Children who did not join the psychosocial programs usually were not close to other children in the community because they had limited interaction with their peers.

4.3.2 Lambaro Skep Village

Housing and Financial Conditions

Many children in Lambaro Skep felt comfortable enough living in the barracks, which were quite decent, well maintained, and clean. The very close distance between the barracks made the children happy because they could meet and play together easily. However, there were also many children who had uncomfortable shelters and did not enjoy living in barracks because they did not have privacy and the situation in the community was not supportive for them. The three-kilometre distance from the coastline sometimes raised tsunami anxiety, even though it was not as high as for the children in Lampineung, whose shelters were located only 800 metres from the shoreline.

Psychosocial Programs

In Lambaro Skep, the psychosocial activities were also intensive and varied. One program was very significant for the recovery processes of the children, i.e. traditional music and dance, assisted by Taloe organization. Many children were involved in this program and three of them (Fira, Panji, and Kaka) were participants of the study. Amel participated in another psychosocial program conducted by Care International Indonesia. Four other children (Komar, Titin, Rifa, and Jamal) did not participate in the psychosocial programs provided by the NGOs because they had difficulties in mingling with their peers in the community.

Peers' Situation

In Lambaro Skep, most of the children's old friends survived and when they met their peers after the tsunami, they were very happy. In addition, the barracks or shelters were close to each other and many children felt happy with that situation. Common expressions during the interviews were as follows:

"I am happy staying at the barracks, because I have many friends; I can play with my friends as much as I like" (Fira, Lambaro Skep, May, 2006).

"[It was] always so crowded and entertaining. If I was sad, I went directly to my friends' houses and played with them, then [I] forgot [the problems]" (Kaka, Lambaro Skep, May 2006).

The other advantage was that there were various activities provided by the NGOs, so that the children were able to meet their friends as often as they wished, to be happy together, and to develop close friendships.

However, the close setting of the barracks also could give some pressures for the children, especially when they had problems with their peers. Children were prone to be exposed to mockery or fights with friends, or they might have been negatively influenced by their peers' bad behaviour (for examples: smoking, motor-cycle racing, etc).

4.3.3 Tanjong Village

Housing and Financial Conditions

In Tanjong, although many houses were totally destroyed, others were only partly damaged, allowing the owners to repair them. Likewise, some public facilities were destroyed but several remained, such as the mosque and the village hall. The total damage rate was approximately 75%.

The conditions in Tanjong were better than in any of the other three villages. Most of the children involved in this research stayed in their rebuilt homes (despite unrepaired damage in some parts of their houses). The distance of only two kilometres from the coastline could still cause anxiety, but far less than the anxiety felt by children in Lampineung, as the village enjoyed the protection of a hill.

Psychosocial Programs

The psychosocial programs in Tanjong were also varied because they combined religious activities with educational and refreshing activities such as games and traditional dance. The *ustadz* and *ustadzah*, as the social workers, showed care and attention and the children were already familiar with them because they were from the same village as the children. Therefore, these situations influenced the children to participate actively in the psychosocial programs in the community. The Koran-reading centre, which also provided various educational and social programs, enabled the children to become involved in more integrated programs. This was an advantage for the children. The three girls from this village also had a close and supportive relationship with an adult mentor who was their *ustadzah*. The three boys did not build up a close and supportive relationship with their mentor, possibly because it was not usual for males to have a close mutual relationship.

Peers' Situation

The peers' situation in Tanjong was almost the same as the situation in Lambaro Skep. The children did not lose many friends and the various programs in the community provided them opportunities to meet their friends and develop close relationships with them.

As what one of them said,

"[I am] glad, [because] if there was an activity, it was easy to ask friends to gather, so we could start dancing or do the activity soon" (Disa, Tanjong, May 2006).

Some negative peer conditions were also present in Tanjong, i.e., the habit of mockery towards an orphan and the presence of gang members whose behaviours were considered negative by the community (smoking, pornography, motor-cycle racing, etc).

4.3.4 Lampineung Village

Housing and Financial Conditions

In Lampineung, many survivors had already returned to the village before the barracks were built. They then stayed in tents provided by NGOs or they erected basic shelters by themselves. Some others stayed at their relatives' house outside the village. Most of the children felt uncomfortable and unsafe living in barracks, which were in a poor condition, with limited toilet facilities and limited access to clean water. Moreover, the distance of only 800 metres across flat land to the coastline often triggered anxieties about another tsunami. There were now very few physical barriers such as trees or high buildings between the village and the sea. Because of this, the people in the barracks became very tense during rainstorms, fearing another tsunami. In addition, there were significant differences in temperature between day and night. It was very hot at noon and very cold at night.

"When I visited the Lampineung village, I saw this area was so empty, (with) not many trees or buildings. Some people said that there were many houses and trees there, but everything was wiped out by the tsunami. From the barracks where people lived, I could see the sea. Before the tsunami, people were not able to see it. Once there was a rainstorm, and the sound of the rain was extremely strong, it was roaring and made my heart beat fast. At that time I felt powerless and imagined how much worse the children and people in this village felt" (the researcher's field notes, January, 2006).

Psychosocial Programs

The psychosocial program in Lampineung was very limited in the form of all the three aspects assessed in the study: duration and intensity; form of activities; and relationship of social workers with children. Therefore, from the four participants of the study, only one child (Rini) actively participated in the psychosocial program, while the three boys (Andi, Fati, and Deri) rarely participated. This was because the programs were not varied and interesting, the relationship between children and social workers never became personal, and the frequency of the program was only once a week, which was insufficient.

Peers' Situation

In Lampineung, the mortality rate was very high (around 70%). Before the tsunami, there were about 60 children of the same age as the participants of the study (Andi, Deri, and Fati), but after the tsunami, there were only around 15 children left. This situation was disadvantageous for the children because they did not have many friends of their own age with whom they could play. Sometimes, older children had a negative influence on them because they were likely to become

involved in behaviours considered negative or risky by the community, such as racing on motor cycles and smoking.

4.3.5 Comparison of the Four Villages

With regard to the physical conditions of the villages (the damage to the infrastructure, the overall conditions of the housing, water, and sanitation, and the location from the shoreline that could cause anxiety about future tsunamis), Lampineung had the worst physical living conditions. By contrast, Tanjong had much better physical conditions. The conditions in the two other villages, Terbeh and Lambaro Skep, were of a level between those of Lampineung and Tanjong.

A high level of negative physical circumstances may hinder the recovery process from trauma reactions after the disaster because it may make children feel uncomfortable and insecure. Such a negative physical environment could also thwart the adaptation process because children were likely to experience more difficulties when they lived in an environment that was substandard.

Regarding the psychosocial programs, the best implementation of the psychosocial programs for the children was in Terbeh, followed by Tanjong, and Lambaro Skep. The psychosocial program in Lampineung was the weakest because it was less intensive than the other programs, the weekly sessions were very short, the types of activities were limited, and the relationship between the children and the social workers was not close.

Children who actively participated in the psychosocial programs provided by the NGOs were able to gain many advantages from the programs. They could play with their peers, they could forget their sadness by associating with friends, they could receive guidance from social workers as mentors, and they could acquire other useful skills from their participation. All these benefits may have been helpful in their adaptation and recovery process from traumatic reactions.

On the basis of the description about peers, we understand that friends did not always provide support for the children. They sometimes also provided challenges, notably when there were peers who tended to bully or mock other children, especially because they were orphans or because they had characteristics that did not suit the preference of their peers, such as not being beautiful or sociable.

Among the participants, seven children (Dian, Aning, Riska, and Ilham from Tanjong; Rifa and Amel from Lambaro Skep, and Rini from Lampineung) experienced being mocked by their friends because they were orphans. Four children (Rini and Fati from Lampineung; Titin from Lambaro Skep; and Azizah from Terbeh) were mocked because their physical appearance was ugly (according to their peers) or because they tended not to play with friends in general.

With regard to other challenges from peers, two children (Riswan and Andi) became involved in behaviours that were considered negative and risky by the community because they often played with older children. Three children (Deri and Andi from Lampineung; and Komar from Lambaro Skep) often had fights with their friends, and three other children (Jamal and Rifa from Lambaro Skep; and Azizah from Terbeh) were isolated from their peers. Various challenges from peers had the

potential to impede the children's recovery and adaptation processes because they were in a critical period of development regarding peer influences. Negative experiences with peers could impose more burdens, which could lead the children to feel worse.

4.4 Kinship Systems in Aceh and their Manifestation in Neighbourhoods

An aspect of the macrosystem that had a major influence on the Acehnese as they faced life after the tsunami was their kinship system. Due to the matriarchal marriage tradition in Aceh described in Chapter 2, *gampongs* commonly house many extended-family members from the mother's bloodline. It is common to find that one house contains not only the nuclear family, but also a grandmother or grandfather or the mother's younger sister or brother. In addition, the houses of the family from the mother's side are usually nearby; therefore close neighbours are likely to consist of extended family members. The *gampong* in the Acehnese community provides possibilities for interaction among children, family, and peers. With regard to the kinship system, this study focuses on understanding the influence of the Acehnese kinship system in *gampongs*, and specifically on the roles of the extended family and close neighbours in 'collective' child-rearing practices. In addition to this, the study also identifies the potential supports and threats from neighbours for the children.

In Aceh, as a close-knit society, the behaviour of people, especially children, was noticed by other members of the community. For this reason, extended-family members were involved in a practice of 'collective' child-rearing through shared responsibilities for a child's development. Close neighbours, whether they were extended family members or not, were in a position to interact with the children intensively and frequently. We investigated two aspects of the children's close neighbours: (a) whether there was a family bond with the close neighbours and (b) what the quality of the relationships was with these neighbours. We also identified potential support and pressure from the close neighbours for the children.

4.4.1 Extended Family as Close Neighbours in the Four Villages

Before the tsunami, all the child participants had their extended family from their mother's lineage as their close neighbours. But after the tsunami, several of them did not have extended family close by. The patterns of interactions and relationships among members of the neighbourhood were also different. The following paragraphs provide a description of the presence of extended family in the neighbourhoods of the child participants in each village and the patterns of relationship among them, after the tsunami.

In Terbeh village, the close neighbours in the camp where the child participants lived consisted of people from various villages devastated by the tsunami in Pulo Aceh and other regions of Aceh Besar and Banda Aceh. Therefore, very often they did not know the people who lived close by. Extended families were scattered among several camps that were far from those of the participants.

When they lived in Pulo Aceh before the tsunami, their close neighbours were people from their extended family. Two participants, Mariana and Yuli, were blood-related. In the camps, they had two other families within their extended family as close neighbours. Although they did not have many blood-relations nearby, the relationships among their extended family members were close. Hanum also had few blood-relations close by. Azizah did not have a member of her extended family living nearby. The fact that the tents were situated very close to one another enabled children and parents to have intensive interactions with other members of the community; but because many of their close neighbours were people with whom they did not have a close relationship, the patterns of interaction differed greatly from those in their original village. In the camps, they were like strangers to one another. Children also felt less close to their new friends. Usually they played more with friends who came from the same original village.

In Lambaro Skep, Tanjong, and Lampineung villages, members of the village knew each other because they lived in the same neighbourhoods as before the tsunami. Many of them were blood-related. However, there were some differences in the characteristics of each village. In Lambaro Skep and Lampineung, the proximity of the barrack-rooms to one another made children and parents interact intensively with their close neighbours. Children were certain to meet their friends and older people could very often have a conversation with their neighbours. Everybody could watch or hear the activities of their neighbours. Children could easily mingle with friends and play.

The differences between Lambaro Skep and Lampineung were in the rate of mortality and the nature of relationships among close neighbours. On the basis of the information from local authorities and social workers in Lampineung we concluded that around 70% of the villagers had died because of the tsunami while in Lambaro Skep the rate of mortality was not more than 30%. The nature of relationships among the surviving inhabitants in Lampineung was not as close as before the tsunami. Some of the informants said that people in Lampineung were more cynical towards other people, did not help each other as much as before the tsunami, and were more likely to gossip. In Lambaro Skep, the nature of relationships among close neighbours was good and they readily showed mutual support and care. In Lampineung, three of the four participants (Deri, Andi, and Fati) were blood-related, even though Fati's relationship with Deri and Andi was not as close as that between Andi and Deri. One child (Rini) did not have extended family as her close neighbours. Almost all members of her extended family who had lived in the village had died, while the surviving extended family members lived in other villages not far from Lampineung. In Lambaro Skep, from eight participants, two children (Fira and Kaka) had a large extended family lived close by, one (Panji) had fewer extended-family members in the same village, while five (Titin, Komar, Rifa, Amel, and Jamal) did not have extended family as their close neighbours.

In Tanjong, the fact that almost all participants returned to their own houses meant that they were living at a greater distance from one another, and interaction among the children was not as intensive as among those in Lampineung and Lambaro Skep. Notwithstanding, the relationships

within extended families in Tanjong were close and supportive. They helped each other and frequently met to talk or do activities together. Five of the six participants from Tanjong (except Aning) had extended family who lived as their close neighbours. All of Aning's extended family members from her mother's lineage had died, while her extended families from her father's lineage were in other cities.

4.4.2 Support and Pressure from Close Neighbours

Kinship networks in the neighbourhood and the settings of the new settlements in the four villages could provide support for the children. Support systems within the close neighbourhoods resulting from the 'collective' child-rearing practices were manifested in the form of care and help for the children when they faced difficulties or when the nuclear family could not provide adequate support. Some examples of support among close neighbours were as follows: when a parent was unable to take care of a child due to illness or work, a grandmother or an aunt would take over. In day to day practice, extended family members or close neighbours might also remind the child to pray and read the Koran, or warn and guide the child when s/he was not acting according to the established norms. When a child was experiencing problems in the family, for example being chided by a parent, s/he could 'escape' for a while to their grandmother's or aunt's house to report, to seek protection, or just to play. As a respondent said:

"If we told him this or that, he reported it to his grandmother. If we did not give him what he wanted, he ran to his grandmother's house and said, 'Grandma, I want this' Why? 'Mother didn't give it to me' –like that. His grandmother almost always gave him what he wanted, such as candies or money to buy snacks" (Kaka's mother, Lambaro Skep, April 2006).

Family *esprit de corps* (feeling as one family) inspired close neighbours and especially extended family members to join hands to overcome the aftermath of the tsunami. For example, if there were relatives in financial difficulties, family members would help and support as much as they could, and when they knew that a family was experiencing problems, they came and gave comfort. There was mutual support among family groups, but mainly if they belonged to the same extended family. Sometimes, support was also given to other extended families, especially in the case of close neighbours with whom people had good relationships.

Such support from close neighbours and extended family could help children in the process of adaptation and recovery from trauma symptoms resulting from the tsunami. The happiness of the children living in the shelters and barracks was also important in the process of recovery and adaptation from the traumatic experiences after the tsunami.

However, the proximity of each family's shelter to the others (almost no distance because they lived in the same barracks) also increased the possibility of negative influences from the neighbourhood, because the interactions among members of close neighbourhoods often resulted in gossip. Gossip could arise when a family had something that was considered negative by the neighbours, for example the presence of a stepmother.

“Deri was so afraid of his new mother because he heard bad things about stepmothers from the neighbours. They said that his stepmother was stern and did not love him, so those [ideas] influenced his attitude towards a stepmother” (Deri’s father, Lambaro Skep, September 2006).

Another risk was discrimination or isolation of people who did not have familial relationships with their close neighbours. This was one of the disadvantages for children or others who had few or no members of their extended family in the village. In this case, support and help were also much more difficult to access. Even though not all members of the community paid attention to their own family or extended family only, most did prefer to do so. The situation could be even worse when the family was not originally Acehnese. For example, if one or both of their parents were immigrants, and they did not have an extended family in the village, these people could be treated unfairly. As declared by some of the participants:

“Well, our mother came from Medan, and so we had different habits from the Acehnese; maybe that was one of the reasons why we were not so close to our neighbours”(Titin, LambaroSkep, 2006).

[why don’t you make friends with them?] “They were cocky, [they] did not want to play with us” (Nova, Lambaro Skep, 2006).

“Our family was often treated unfairly; we often did not get rations, even though we lived in the barracks. Indeed, we were not the original people here, we migrated to this village before the tsunami, but our lodgings were also hit by the tsunami. [We] do not know when our house will be built, until now there has been no clarity. Although many houses have already been finished and many families have received one or two houses, we have not received any certainty”(Amel’s eldest sister, Lambaro Skep, October, 2006).

Komar, Titin, and Nova from Lambaro Skep - whose father maltreated them and never provided them with enough money for meals and other basic needs - often heard people talking about the disharmony in their family in a cynical way. Komar and Nova also tended to perceive their neighbours and peers in the barracks as ‘unfriendly’ and ‘arrogant’. Therefore they did not have many friends of their age. Deri from Lampineung often heard bad things about his father’s new wife. The neighbours scared him with the idea that stepmothers were bad and that therefore his stepmother did not love him. Amel’s family faced discrimination regarding rations distribution and house building because they were originally not from Lambaro Skep. Amel did not feel bad about this because she was unaware of the issue; but she was indirectly influenced by this situation because she did not receive enough resources to fulfill her basic needs after the tsunami. Rini from Lampineung also received negative treatment from her neighbours. They criticized Rini repeatedly, because her house was messy and dirty. They blamed Rini for that, especially when Rini’s aunt and uncle were not at home. Rini was very annoyed by this situation.

Such gossip about and discrimination against a family could have a negative influence on the adaptation and development of the children after the tsunami. The burden was already very high because of the tsunami, but they also had to bear other burdens imposed upon them by the community. When this happened, children’s adaptation and recovery from trauma was likely to be thwarted.

Another potential risk was for children who were considered by their neighbours as having behaviour problems. This resulted from the 'collective' child-rearing practices in the community. Such children were more likely to receive social punishment and other forms of negative treatment from the people in the village. Children who did not obey religious rules, showed aggressive behaviour or other behaviour considered negative by the community, were more likely to be rebuked, not only by their parents but also by their extended family members and close neighbours. In a more extreme form, these children were prone to receive negative labels or stigmas as naughty or as 'bad' from close neighbours and other members of the community. More people treated them in a cynical way.

Andi and Deri from Lampineung, Riswan from Tanjong, and Komar and Jamal from Lambaro Skep, were often labelled as naughty or disobedient boys. They often quarrelled with their neighbours, even with adults in the village. Azizah was labelled as a very shy girl and many people, including her mother, often said in her presence to others that she did not have any friends.

The negative atmosphere towards such children was a disadvantage for them after the tsunami. Instead of helping children to ease their anger or uncomfortable feelings that might have resulted from their traumatic experiences during the tsunami, negative treatment from community members could aggravate the negative emotions of the children and could increase their anger and aggressive behaviour. This condition increased the possibility of the children's having more traumatic symptoms or more problems in the process of adaptation after the tsunami.

4.5 The Role of Islam in Dealing with Life after the Tsunami

Islam and Acehnese customs cannot be separated, and Islamic teaching is embodied in almost all aspects of Acehnese life (Melalatoa, 2005). Unquestionably, the influence of Islam on Acehnese people is very pervasive. Islam has provided the guidelines for their lives since the 13th century, and Islamic teachings, values, and norms have been passed on from generation to generation until now through the process of socialization and internalization. This study focuses on the Acehnese interpretation of the tsunami and the way in which it is related to Islamic religious beliefs (macrosystem), the religious practices and customs in the community (mesosystem) and family (microsystem), and also the children's religious coping (personal level) after the tsunami.

4.5.1 Interpretating and Explaining the Tsunami

Islamic beliefs contributed to the way in which the Acehnese saw the earthquake and the tsunami. Most Acehnese interpreted the tsunami as God's will and most people said during the interview sessions: "These all are destiny (*takdir*) from God". The Acehnese believe things that happen in life are fate. A devout Muslim perceives Allah as the owner of all life and thus having

power over life and death, “Humans are Allah’s servants who may have their plans, yet it is He who decides”.

Many of them also thought that the tsunami was a trial imposed by God on the Acehnese. This interpretation is accompanied by a belief that there will be happiness after suffering and Allah will give only the best for His followers. God allowed this to happen to make them stronger, more patient, and introspective, and He gave the Acehnese the chance to live better and to be closer to God. As one mother said:

“Bad things are trials from Allah; we need to be patient and pray because Allah will help us. Allah gave us trials so we can be closer to Him” (Riska’s mother, Tanjong, May 2006).

Another interpretation of the tsunami is that it was a warning from Allah to the Acehnese. The Acehnese perceived that Allah showed His wrath because people no longer respected His wisdom. The Acehnese thought that the lack of respect was manifested in the prolonged armed conflict, the corruption, the ‘inappropriate’ styles of dress worn by some Acehnese, ‘improper’ interactions between the sexes, and sexual misconduct by some people. The survivors of the tsunami saw it as an opportunity to repent. As one mother put it:

“Well, the tsunami is a warning, a warning for us, so we can think of Allah more often. Not go back to the old days, hmm, I mean remember Allah more, pray more. The tsunami gave us wisdom. Don’t think of earthly possessions only. If we die we won’t take our wealth with us. [We] must remember the recent tsunami; we could have been killed, but we were given another chance” (Fira’s mother, Lambaro Skep, April 2006).

The belief that the tsunami was a warning from God was strengthened by the fact that many mosques were still standing after being hit by the devastating waves. The mosque is a very important building for the Acehnese as a symbol of Islam. They thought that God did not allow the mosques to be destroyed to prove His power, and that it might guide people back to Him.

“Miraculous! Every time we went to villages devastated and flattened by the tsunami, we saw that the mosques always remained intact. It was a miracle. *Allahuakbar* [God is the greatest]. We cannot disregard God anymore” (Ary, local social worker, January 2006).

The fact that many mosques were still standing after the tsunami helped Acehnese people to remain connected with their religion. The mosque played a significant role as a place of refuge during and after the tsunami and became a major source of comfort for the Acehnese.

The interpretations might vary but there were common views about the tsunami as a manifestation of God’s power, reminding people to be closer to God and obey God’s wishes. These interpretations manifested in the attitude of the Acehnese, became positive resources of the Acehnese in the process of adaptation after the tsunami. Believing that God determines the destiny of humans and that all that happens to humans is God’s will, the Acehnese felt that all they needed to do was to live in submission to Allah. People who dedicate all their effort, hard work, and life to the will of Allah are called *tawakal* (being in total submission to God) people. As a man in Aceh said:

“One thing that has made me survive until now is that I am trying to be *tawakal*. Despite our efforts, we surrender all to the will of Allah. Allah decides our blessings and fate in this world” (Fikri, close neighbour of Jamal, May, 2006).

After the tsunami, the government and other institutions in Aceh frequently tried to broadcast the spirit of resignation and *tawakal* in facing the tsunami. It was proclaimed through the mosques and *meunasah* throughout Aceh that people should be more quiescent and surrender to His power. The religious leaders preached intensively in the mosque or the *meunasah* to remind people about the power of God, and how they could be at peace through total submission to Allah. This intensive preaching was intended to help the Acehnese face the adverse conditions after the tsunami. Some of the people truly felt the benefit of the *tauziah* (preaching) of the religious leaders. As a woman said:

“[I was] pleased with the preaching of the leaders since it calmed my heart. It reminded me of the basic foundation of my religion, to be *tawakal* towards God’s will. It helped me to accept [the impact of] the tsunami” (Aunt of Deri, Lampineung, March 2006).

In the view of the Acehnese, *tawakal* is a moral duty of people towards Allah. Psychologically, a *tawakal* attitude can protect someone from prolonged disappointment. *Tawakal* helps a person to accept whatever condition s/he encounters with a good predisposition towards the will of Allah. This attitude may help people to find peace of mind.

They also seek peace through praying five times a day, reciting verses of the Koran, joining actively in reading the Koran with other people, carrying out *sunnah* (optional) prayers such as *dzikir* (prayer after obligatory *sholat*), and *sholat tahajud* (praying during the night). A mother said:

“When I was down and did not know what to do, I performed *wudhu* (ablution) and prayed”

Another mother said:

“When I was planting on the hill, and then remembered my sons [who died in the tsunami], I would call on God’s name [*nyebut*] and imagined that my children had found peace. I prayed for them. After that, I felt more relaxed. I prayed a lot” (Mariana’s mother, Terbeh, February 2006).

The tsunami drew people closer to Allah and turned them back to a life that they believed to be in accordance with the Islamic values expressed in the Koran and Traditions of the Prophet (Hadith). Experiences of sorrow, destruction, and devastation were seen as an opportunity for self-improvement for individuals as well as for the community (Erlindawati, 2007). Such attitudes and behaviours may have helped the Acehnese to recover psychologically, move forward in their lives, and adapt well in the face of the adversity after the tsunami.

4.5.2 Religious Practices in the Community and Family

The practice of religious rituals was persistently emphasized in Aceh. An example is the prayers, which the Acehnese perform five times a day.

“When the call to prayer was heard (*azan*), all the people stopped the activities they were doing. When they were in a meeting, or playing, or doing other activities, all elements of the community stopped their activities and were silent. The atmosphere became quiet and solemn. When they were riding in a car or on a motor cycle, many of them stopped at the nearest mosque and prayed, because the Islamic norms led them to pray as soon as possible after the call to prayer sounded.

Children who were in the middle of activities with us in the village hall ran back to their houses to pray before continuing the activities. Other children, who had a schedule to read the Koran directly after the

prayers, changed their clothes, put on long trousers or dresses and went to the *meunasah* or mosque where they prayed and read the Koran” (Researcher’s field note, February, 2006).

As explained earlier, the idea of Aceh as a Sharia state was agreed during the ceasefire and peace agreement process. The government of Indonesia granted Aceh Darussalam the right to be an Autonomous Province governed by the Sharia, and so the Sharia police has the task to ensure that people comply with the rules, including rules about social conduct such as fasting, wearing a *hijab* and modest clothes, dating, how to behave towards the opposite sex, and sexual behaviour. This law was implemented mainly for the Acehnese and breaking it is followed by various kinds of punishment, such as being whipped. The punishments are carried out in public after Friday prayers.

One example of the rules implemented by the Islamic Sharia in Aceh concerns the clothes that women wear. When an Acehnese woman leaves her home, she has to wear the *hijab* and a long dress that covers the whole body. If Sharia police officers noticed a woman who did not obey this rule, she was warned or punished, as experienced by the main researcher:

“Even though I am not a Muslim and I am not an Acehnese, every time I went into the community, I wore the *hijab* and a long dress, because I respect the community values and did not want to create unnecessary problems. It also helped in the process of interaction with the community. Maintaining a way of wearing dress as similar as possible to that of the community made me feel like a member of the community. However, because I stayed with and worked with in an international NGO and a local NGO which did not pay much attention to the clothes we wore, I did not always wear *hijab* or a long dress. One day, early in the morning, when I was having my breakfast in a food stall close to the house where I stayed, I did not wear *hijab* and a long dress. I just wore a T-shirt and jeans, as I usually did when I had breakfast there. Suddenly, Sharia police officers in their car stopped at the food stall and came to me. They interrogated me and asked why I did not wear a long dress. They asked whether I was a Muslim or not, and when I said that I was not a Muslim, they asked me to always wear a long dress whenever I went outside the house and then they left me” (Researcher’s field note, February, 2006).

Such incidents show how the local government tried to make sure that everybody in Aceh behaved as suggested by the prevalent religious norms and values. This might be based on the interpretation that the tsunami was a warning from God and thus the local government thought the practices of Sharia might decrease the chance of the entire community’s suffering another tsunami.

At the community level, each village had its own religious practices for the children. Table 8 describes some of the prevailing religious practices in the four villages after the tsunami.

Table 8. Religious Activities in the Four Villages after the Tsunami

Aspects	Lampineung	Terbeh	Lambaro Skep	Tanjong
Routine & structured religious activities	There were Koran-reading activities in the hours after Azar prayer and Isya prayer. People in the community also encouraged children to pray five times a day. But the intensity and consistency in guiding and assisting children in such religious activities were weak. This was due to the small number of religious leaders left in the village.	There were quite intensive activities regarding praying and Koran-reading. <i>Imeums</i> (religious leaders) from the village and also <i>ustadz</i> (young male religious leaders) from aid institutions (UNICEF Children Centre) assisted the children intensively.	There were very intensive activities regarding praying and Koran-reading led by religious leaders. Children were also susceptible to social sanctions because the village was close to the Sharia enforcement agencies.	There were very intensive religious activities such as prayers, Koran-reading, and also TPA (<i>Taman Pendidikan Alquran</i> , the Koran-reading centre) because there were local <i>Ustadzah</i> (young female religious leaders) and <i>Ustadz</i> who were always invited and who reminded the children to attend the activities.

Acehnese religious beliefs and faith are at the centre of the religious life of the community (mesosystem level) and family (microsystem level) and strongly influenced Acehnese children's religious life. The children learned how to behave properly in their daily interactions with family and other community members, and by the religious practices in which they were required to take part. This continuous process of socialization helped children to internalize Islamic values, habits and beliefs.

For example, the importance of praying five times a day and praying together (*sholat berjamaah*) is continually emphasized in communities and families. Not only through *azan* (the call to prayer from the mosque or *meunasah*) but also at home because Acehnese fathers and mothers usually remind their children to perform the prayer. *Sholat berjamaah* is also regarded important within the families. At certain times when the whole family is gathered together, such as during morning prayers (*subuh* prayer), the family prays together. The father is usually the *imeum* (prayer leader), and the mother and children follow him. These conditions help children to learn and adopt patterns of praying according to the schedule, either individually or together with the community or family.

This was also true for Koran-reading activities, in which the community and family provided a schedule for the children so that they could do it regularly. Praying and reciting the Koran are seen as positive habits and should be done by every child in the community, because the Acehnese regard Islam as the main guide for their behaviour. Children with these habits behave more in accordance with the expectations of the society and their family, which has all sorts of benefits for them. Some of the benefits are: the increased knowledge of religious values, norms, and other rules and the attainment of good appraisal from adults. After the tsunami, active involvement in religious activities in the village was also one of the healthy coping mechanisms the children had at their disposal. They could meet their friends, find support from their peers and/or adults who guided them, and they might

feel a sense of living in a normal situation because many people did the same as they did. In addition, these activities might reduce stress because during the activities they felt safe and could forget the pain in their lives.

4.5.3 Children's Forms of Religious Coping

With the inculcation of a strong religious life, once the children face a problem it will be easier for them to retain those habits, for example to pray and to recite the Koran, whether they do it in the mosque, in the *meunasah*, or at home. Strong religious habits also make it more likely that children can cope with possible hardship in a religious way.

The internalization processes of Islamic beliefs, norms, and values also influence the children's belief in God. When they face problems, they pray or recite the Koran, asking for Allah's guidance and blessing because they believe Allah will give an answer and help to solve their problems and make them feel better. They believe Allah has power over human life. Many participants in the study, especially the girls, conducted these religious coping activities; they said that if there were problems, they prayed and recited the Koran. As some of them shared with us:

"If I had a problem, I prayed. It made me feel better and enabled me to sleep better, too" (Rini, Lampineung, interview, May 2006). Another girl said: [when I feel sad, I] "read the Koran [*ngaji*], because when I'm reading the Koran, I don't remember my problems" (Rafita, Terbeh, May, 2006) and another girl said: "*Sholat*, after that comes relief" (Disa, Tanjong, May, 2006).

Another girl said:

"[I was] very sad. I cried because the burden was so heavy. But whenever I felt very sad, I prayed. I read the Koran, my tears were pouring down, but I kept praying and reading the Koran. After that I felt relieved and knew what to do. In our religion, we believe that if we are very sad and we pray, we will get God's guidance" (Titin, Lambaro Skep, May, 2006).

These religious beliefs and practices that were rooted in the lives of the Acehnese could soften painful memories, restore the emotional conditions after suffering, and might help children to take a more positive view of the tsunami and to find meaning in the face of difficult life changes. The Acehnese believe that the capacity to cope in a religious way was the source of Acehnese children's strength and might help in their process of adaptation after the tsunami. This is because, in the Acehnese situation, these positive effects necessarily depend on submitting to Islamic practices, because of the fact that one cannot participate fully in the Acehnese society or be valued and accepted by the community members if one does not live by (Acehnese) Islamic rules.

The habit of praying, Koran-reading and carrying out other religious activities also caused children to be often together with family, friends and other community members. Being connected with their cultural roots and maintaining the habits prevalent in their environment also might help children to feel that they were not suffering alone. The chance to meet with friends and others in communal religious activities also increased the sense of togetherness and mutual support, and these advantages might ease the sadness or other trauma symptoms that resulted from the tsunami.

Unfortunately, not all children maintained such habits and practices. Among the twenty-two child participants, two children from Lampineung (Deri and Andi), three children from Lambaro Skep (Rifa, Komar, and Jamal), and one child from Terbeh (Aisyah) did not seem to cope in a religious way in facing the adversities after the tsunami. This could have happened for several reasons. One of the reasons was that their caregivers did not assist and monitor the religious activities of their children regularly and intensively. Another reason might have been that the children were still angry or unsatisfied with their conditions after the tsunami. Children who did not become actively involved in the religious activities or who did not use religious coping in facing their daily problems tended to receive negative treatment from the family and the village members because they were considered as behaving badly. Such conditions might put the children in a situation that did not support their recovery from trauma symptoms and their adaptation process, and might lead to vulnerability.

Chapter 5

Children's Patterns of Adaptation and Factors in their Bio-Ecological Systems

Having answered Research Questions 1 to 5 in the previous chapter, we will now turn to the following Research Questions:

1. What were the children's patterns of adaptation and their trauma symptoms one year after the tsunami?
2. How were the patterns of adaptation related to the risk and protective factors within the children's bio-ecological systems?

This chapter is organised as follows. The first part explains how the study variables were assessed. The second part describes the results of the qualitative data analysis to answer Research Questions 6 and 7. The third deals with the results of the quantitative data analysis in order to see whether it backs up the qualitative analysis in answering Research Question 7.

5.1 Assessment of Study Variables

5.1.1 Patterns of Adaptation

In the present study, we determined the resilience and vulnerability of the children on the basis of their patterns of adaptation. Luthar and Zelazo (2003) and Wright and Masten (2006) suggested that the criteria used to represent positive or negative adaptation must be in line with the developmental tasks of the children. Developmental tasks are responsibilities children are expected to engage in and accomplish during particular periods of development (Masten & Obradovic, 2008).

According to Masten and Obradovic (2008), eight patterns of adaptation can be observed among child survivors of a disaster that are either adaptive (positive) or maladaptive (negative) (see Figure 1, page 24). Patterns that reflect resilience / positive adaptation are shown in lines A (stress resistance), C (normal response and recovery), and E and F (positive transformation from higher and lower starting levels of adaptive functioning). Overall patterns reflecting vulnerability / negative adaptation are shown in lines B (delayed breakdown), D (breakdown without recovery), G (persistent maladaptive with disaster-related dip in functioning), and H (unresponsive maladaptive, possibly indicating a floor effect). The patterns of adaptation can be identified on the basis of the level of functioning of each child, at three moments in time: before the disaster, immediately after the disaster, and several months or years after the disaster.

This study identified the patterns of adaptation based on the data of the children's functioning before, immediately after, and one year after the tsunami. Children's functioning immediately after the tsunami was assessed on the basis of their traumatic grief reactions. With regard to the children's

functioning before and one year after the tsunami, we assessed the children's functioning in three domains of developmental tasks of school-age children: (1) academic functioning, (2) functioning with peers, and (3) functioning at home. Each domain of functioning was categorized as good (score 2), normal or average (score 1), or problematic (score 0). On the basis of the ethnographic results, we formulated criteria for each category as described below. We also computed an inter-rater reliability coefficient for each instrument, using the Intra-class Correlation Coefficient (ICC).

Level of Functioning before the Tsunami

Data regarding the level of functioning before the tsunami were gathered by means of interviews with parents and significant others of the children.

Academic functioning. *Good* academic functioning means that the child was diligent or achieved good marks at school. *Normal* or *average* functioning means that the child was able to maintain his or her academic motivation and/or achievement at an average level - at times diligent, sometimes lazy – and when s/he was told to study s/he would study. *Problematic* functioning means that the child's academic achievement was bad and/or there were complaints from others (especially caregivers) about the child's motivation to study. The ICC for academic functioning before the tsunami was .92.

Functioning with peers. Functioning with peers was categorized as *good* if the child had many friends, was able to play happily with friends and maintained a good relationship with them. Peer relationship was categorized as *normal* or *common* if the child had some friends but sometimes had difficulty in maintaining good relationships or interacting spontaneously with them. The child might also tend to be selective in making friends. Peer relationship was categorized as *problematic* if the child tended to isolate himself or herself, had very few friends, and / or kept at a distance from others. The ICC for functioning with peers before the tsunami was .76.

Functioning at home. Good functioning at home was characterized by the child's tendency to have a close relationship with other family members and (specifically for a girl) help with household chores. There was a *normal* or *common* relationship with the family if the child had a moderately close relationship with the family members and showed limited concern for domestic chores. A child was listed as having a *problematic* relationship with the family if s/he ignored his or her family, did not have a close relationship with his or her family members, or tended to trigger complaints from relatives or parents by behaving unacceptably (e.g. by triggering fights and refusing to perform a variety of tasks requested by relatives or parents). Besides these indicators of a problematic relationship, it is also possible that the child was overly dependent on the family. The ICC for functioning at home before the tsunami was .93.

For each of the three domains we gave one of the following scores for each category: 0 (problematic), 1 (normal/average), or 2 (good). We calculated each child's level of functioning by adding the scores for the three domains to obtain a total score. The range of this total score for the

level of functioning before the tsunami was from 0 to 6. The higher the score, the better the level of functioning. The ICC of the level of functioning before the tsunami, based on the total scores, was .94.

Level of Functioning One Year After the Tsunami

The categories of each domain of the children's level of functioning one year after the tsunami were based on caregiver's accounts and information given by the child.

Academic functioning. A child's academic functioning was categorized based on school achievement and motivation to study. A child was listed as having a *good* or *excellent* performance at school if s/he fulfilled at least one of the following criteria: the child was able to show an enhancement of his or her motivation to study and school achievement after the tsunami, or the child's grade level was among the top five in the class. A child was listed as having an *average* performance at school if the child's school achievement and motivation to study were fair and did not increase or decrease, or if the child's motivation to study increased after the tsunami, even though his or her school achievement was not as good as that of other children in the community. A child was listed as having a *problematic* performance at school if his or her academic achievement and/or motivation to study decreased after the tsunami, or s/he was often absent from school, and there were complaints from others (especially caregivers) about the child's motivation to study. The ICC for academic functioning one year after the tsunami was .88.

Functioning with peers. Functioning with peers was identified and categorized based on the child's capacity to develop and maintain relationships with his or her peers. The categories are: (1) intimate-mutual; (2) neutral or normal; (3) negative or non-existent. A child was listed as having an *intimate-mutual relationship* with his or her peers if s/he actively engaged with friends, had at least one good friend, and was able to maintain good relationships with his or her friends for a long period of time. A child was listed as having a *neutral* or *normal* relationship with his or her peers if s/he had many friends (not necessarily close friends) or had a good friend but could not maintain a very close friendship for a long period of time. A child was listed as having a *negative* or *non-existent* relationship if the child had no friends or very few friends, or withdrew from his or her peers, and/or tended to have difficulty in maintaining relationships with friends in general. The ICC for functioning with peers one year after the tsunami was .93.

Functioning at home. Functioning at home was identified and categorized based on the child's capacity to pay attention to, show responsibility for, and develop a relationship with his or her family. The categories are: (1) closely attached; (2) undifferentiated; (3) detached or overly dependent. A child's relationship with his or her family was listed as *closely attached* if s/he had a tendency to pay close attention to and show responsibility for the family, and was able to develop or maintain good relationships with caregivers and siblings. *Undifferentiated attachment* to the family was characterized by the child's willingness to help and pay attention to the family but the frequency was not as regular and/or the quality was not as good as in the case of the 'closely attached' child (the

child still needed to be asked to help, sometimes ignored requests, or felt detached from the family). A child was listed as having a *detached relationship* with the family when s/he ignored his or her family, specifically with regard to domestic chores, and when s/he did not have a good relationship with his or her family members. An additional condition of a negative relationship with family was when the child was excessively dependent on the family. A child was listed as *overly dependent* on the family if s/he always wanted to stay with his or her caregivers and could not be left alone. The ICC for functioning at home one year after the tsunami was .89.

For each of the three domains we gave one of the following scores for each category: 0 (negative/problematic), 1 (neutral/average), or 2 (good/positive). We calculated each child's level of functioning by adding the scores for the three domains to obtain a total score. The range of this total score for the level of functioning was from 0 to 6. The higher the score, the more positive the level of functioning. The ICC for the level of functioning one year after the tsunami was .97.

In order to analyse patterns of adaptation, the levels of functioning before the tsunami and one year after the tsunami were categorized into three zones following Masten and Obradovic's categorization: *maladaptive*, *ok*, and *optimal* zones (see Figure 1). The main researcher together with the two raters decided to convert the total scores of the level of functioning before the tsunami and the level of functioning one year after the tsunami into three categories, in which scores 0 – 2 were categorized as in the maladaptive zone, scores 3 – 4 were in the ok zone, and scores 5 – 6 were in the optimal zone.

Level of Functioning Immediately after the Tsunami

Immediately after the tsunami, the severity of the children's traumatic grief reactions influenced their level of functioning. Therefore, traumatic grief reactions and level of functioning soon after the tsunami could not be strictly separated. The children's traumatic grief reactions and level of functioning soon after the tsunami were identified through interviews with significant others of the children. We asked them about grieving, emotional reactions, behaviour, and daily functioning of the children immediately after the tsunami; how intense the trauma reactions were; and when their grieving and trauma reactions started to lessen.

Due to the devastation of the community (including the destruction of schools), the chaotic situation, and the movement of people from their original villages immediately after the tsunami, the children's level of functioning could not be defined with respect to their academic functioning and functioning with their peers. During the first months after the tsunami, it was common to find children who did not go to school. Some children also moved to other regions and did not have close relationships with peers in those places. Therefore the level of functioning was not primarily identified based on academic functioning or functioning with peers, but more on children's daily functioning at home and the severity and duration of their traumatic grief reactions.

All children experienced a decrease in their level of functioning because of their traumatic grief reactions. We categorized the decrease in their level of functioning using three classifications: mild (score 0), moderate (score 1), and severe (score 2). Children were listed as showing a *mild* decrease in functioning if they recovered very soon from their traumatic grief reactions, for example, if a week after the tsunami they did not cry at all, or showed grief and sadness but were able to control their crying, or the crying lessened within a month, and if they did not have difficulty in maintaining their daily functioning at home. A child was listed as showing a *moderate* decrease in functioning if s/he showed intense traumatic grief reactions, for example, was very sad or cried very often, was very anxious or easily frightened, or day-dreamed very often, and if these symptoms lasted for more than a month. Other conditions that can be identified as signs of moderate decrease in functioning were when for more than a month (but less than three months), a child refused to do many daily activities such as playing with friends, helping with domestic chores, or handling daily self-care. A child was listed as showing a *severe* decrease in functioning when s/he showed a significant decrease in the ability to control his or her emotions and behaviour with regard to traumatic grief reactions and/or daily functioning for more than three months. The inter-rater reliability coefficient for this variable was calculated based on the scores given by the two raters and main researcher for each child. The range of the scores was from 0 to 2. The ICC for this variable was .89.

5.1.2 Trauma Symptoms One Year after the Tsunami

As mentioned in Chapter 2, after a massive disaster, trauma symptoms are commonly found in children. Some children may experience prolonged trauma symptoms and some may recover or adapt positively to the changes in their lives. In the field of resilience study, many researchers found that after traumatic events children showed good performance in the academic sphere and in peer relationships, but nevertheless showed symptoms of distress, such as sadness and depression. This phenomenon tends to complicate the resilience study, especially with regard to defining the outcome or indicator for positive adaptation. Addressing this issue, Wright and Masten (2006) suggested that to define positive adaptation in resilience study after traumatic events, suffering traumatic symptoms is understandable as long as they are not pathological and do not disturb the functioning.

The children's trauma symptoms one year after the tsunami were assessed using the Trauma Symptoms Checklist for Children-A (TSCC-A) developed by Briere (1996). The TSCC-A is a shortened version of the TSCC that excludes the 10 items from the sexual concerns scale. TSCC-A originally consists of 44 items. In our study, we deleted one item about suicide because there were concerns from adults in Aceh that this item might have a negative effect on the children. The TSCC-A consists of 5 clinical scales (Anxiety, Depression, Post-traumatic stress, Anger, and Dissociation).

The anxiety (ANX) scale consists of items regarding generalized anxiety, hyper-arousal, and worry; specific fears (e.g., for men, women; the dark; being killed); episodes of free-floating anxiety; and a sense of impending danger. The depression (DEP) scale consists of items that assess feelings of

sadness, unhappiness, and loneliness; episodes of tearfulness; depressive cognitions such as guilt and self-denigration; and self-injuriousness. The anger (ANG) scale consists of items involving angry thoughts, feelings, and behaviour, including hating others; having difficulty in de-escalating anger; wanting to shout at or hurt people; arguing and fighting. The post-traumatic stress (PTS) scale consists of items of post-traumatic symptoms, including having intrusive thoughts, sensations, and memories of painful past events; nightmares; fears; and cognitive avoidance of painful feelings. The dissociation (DIS) scale consists of items of dissociative symptomatology, including derealisation; one's mind going blank; emotional numbing; pretending to be someone else or somewhere else; day-dreaming; memory problems; and dissociative avoidance (Briere, 1996).

For each item, the child records the extent to which a statement is applicable to him/her on a 4-point scale ranging from never (score 0) to very often (score 3). Raw scale scores are generated by adding together the scores of all items included in a clinical scale. Raw scores on each scale range from 0-27/30 depending on the number of items in the scale. For interpretation, raw scores are transformed into standardized *T* scores using the conversion tables provided in the manual. *T* scores differ depending on child's gender and age. A higher score reflects more severe symptomatology. *T* scores at or above 65 are considered clinically significant. *T* scores in the range of 60 through 65 are suggestive of difficulty and may represent subclinical (but significant) symptomatology (Briere, 1996).

The TSCC-A also includes two validity scales: Under-Response and Hyper-Response. The validity scales detect a child's tendency to deny or over-report symptoms. The Under-Response (UND) scale consists of 10 items least likely to receive the score 0 (never) in the normative sample. The UND raw score is calculated by adding the number of 0 scores on these items. Raw scores are transformed into standardized *T* scores. An UND *T* score of 70 or more indicates that all scores on the five scales of a particular child should be considered invalid. This may reflect a tendency towards denial, avoidance, repression of emotions, or a need to appear unusually symptom-free. When the UND *T* score ranges from 65 to 70, all scores should be interpreted with caution. The Hyper-Response (HYP) scale consists of eight items least likely to receive the score 3 (very often) in the normative sample. The HYP raw score is calculated by counting the number of times a child receives a score of 3 for the eight items. Raw scores are transformed into standardized *T* scores. An HYP *T* score of 90 or more indicates that a child's scores on all five scales should be considered invalid. An HYP *T* score ranging from 75 to 89 means that all scores should be interpreted with caution (Briere, 1996).

TSCC-A was translated into the Indonesian language, translated back into English, and the modified version was approved by Briere¹⁴. We decided not to use the Acehnese language because among the Acehnese there are more than six dialects and there is no standardized orthography. Although Bahasa Indonesia was not the native language of most participating children, it is taught at an early age and used as the main language of communication in schools. However, to ascertain that all children understood the instructions and test questions well, there was also an Acehnese translation available and an interpreter present during the test sessions. In order to assess the reliability of each scale, the test was distributed not only to 132 children in Aceh but also to 415 children in Jakarta, aged 10 to 15 years old. In this sample of 547 children, the reliability score (Cronbach's alpha) for the anxiety scale was 0.74, for the depression scale 0.64, for the anger scale 0.76, for the PTS scale 0.72, and for the dissociation scale 0.74. The internal consistency of the scales was sufficient to high.

In addition to the self-report questionnaire, we also gathered data about the trauma symptoms of the children from their caregiver(s), siblings, and/or local social workers, and from our observations. The information gathered by the self-report questionnaire could not always be followed up by an in-depth interview with the children because many were not ready to discuss about their trauma symptoms. We obtained more data about the trauma symptoms one year after the tsunami from a few children (Mariana, Disa, Aning, Fira, Rini, Titin, and Andi), who were able to discuss their trauma symptoms openly. All information regarding the trauma symptoms one year after the tsunami collected by self-reports and informants were used to describe the children's trauma symptoms one year after the tsunami.

5.1.3 Risk and Protective Factors in the Children's Bio-ecological System

As described and discussed in Chapter 4, the bio-ecological systems include aspects of the individuals and their environment, in which each aspect could act as a risk or as a protective factor. At the individual level, these factors are personal characteristics of the children such as their positive characteristics before the tsunami (sociability, obedience, enthusiasm, pro-social tendency), their degree of irritability before the tsunami, and their ways of coping (religious coping, active coping by participating in psychosocial programs). At the level of the environment, these factors are support and threat from family, peers, and neighbours, and a supportive relationship with an adult mentor.

¹⁴Personal communication with Briere through Psychological Assessment Resources (PAR) Incorporated, from September 2005 to January 2006.

Personal level

Sociability before the Tsunami

The level of sociability was assessed by means of interviews and observations. We identified the continuum of characteristics that reflected sociability, which ranged from sociable to unsociable. Kinds of behaviour considered as signs of sociability were: friendly, open, responsive, and/or welcoming. Kinds of behaviour considered signs of unsociable behaviour were: withdrawn, cold, and/or distant. Each child was given a score for his or her level of sociability. The range of the scores was from 0 to 6. A score of 0 indicated that the child's sociability was very low (unsociable), or that s/he tended to show hostile, cold, withdrawn, or distant behaviour. The higher the score, the more sociable the child. The ICC for this variable was .93.

Obedience before the Tsunami

The level of obedience was assessed by means of interviews and observations. We identified the continuum of characteristics that reflected obedience, which ranged from obedient to disobedient. Kinds of behaviour considered as signs of obedience were dutifulness, politeness, and/or compliance. Disobedience was characterized by behaviour such as rebelliousness. Each child was given a score for his or her level of obedience. The range of the scores was from 0 to 6. A score of 0 indicated that the child's obedience was very low (disobedient), tended to show rebelliousness or resistance, or was rude. The higher the score, the more obedient the child. The ICC for the level of obedience was .92.

Enthusiasm before the Tsunami

The level of enthusiasm was assessed by means of interviews and observations. We identified the continuum of characteristics that reflected enthusiasm, ranging from enthusiastic to apathetic behaviour. Kinds of behaviour considered as signs of enthusiasm were: easily becoming excited, lively, and/or eager to learn new things. Apathy was characterized by behaviours such as lack of interest, boredom, and/or extreme passivity. We gave a score for each child for his or her level of enthusiasm. The range of the scores was from 0 to 6. A score of 0 indicated that the child's enthusiasm was very low, or that s/he tended to show apathetic behaviour. The higher the score, the more enthusiastic the child. The ICC for this variable was .94.

Pro-social Behaviour before the Tsunami

Pro-social behaviour was assessed by means of interviews and observations. We identified the continuum of characteristics reflecting pro-social behaviour, ranging from a pro-social to an egocentric tendency. A pro-social tendency was characterized by behaviour that was helpful, kind, generous, concerned, and/or caring towards others, while an egocentric tendency was identified by characteristics such as selfish, insensitive, and/or nonchalant behaviour. We gave a score for each child for his or her level of pro-social behaviour. The range of the scores was from 0 to 6. A score of 0

indicated that the child was not pro-social, but showed egocentric behaviour instead. The higher the score, the more pro-social the child was. The ICC for this variable was .97.

In order to analyze the protective roles of children's positive characteristics before the tsunami, we changed the continuous scores of each individual characteristic before the tsunami into three categories: low, moderate, and high. The categorization was based on the percentile scores: (1) a low level of an individual characteristic (for example, being unsociable) if the score was under percentile 34, (2) a moderate level of an individual characteristic (for example, being moderately sociable) if the score was between percentile 34 and percentile 66; and a high level of an individual characteristic (for example, being very sociable) if the score was at or above percentile 67. For all positive characteristics before the tsunami, the score of percentile 33 was 3, and except for obedience, the score of percentile 67 was 4. For obedience, the score of percentile 67 was 5.

Irritability before the Tsunami

The level of Irritability of the children before the tsunami was assessed by means of interviews and observations. We identified the continuum of behaviours that reflected irritability, ranging from a bad temper to a calm disposition. Signs of a bad temper were proneness to anger, impatience, readiness to complain/dissatisfaction, and/or obstinacy, while a calm disposition was characterized by behaviour such as patience, tolerance, readiness to accept difficult situations, and/or flexibility. We gave a score for each child for his or her level of irritability. The range of the scores was from 0 to 6. A score of 0 indicated that the child was not easily irritated, or s/he tended to exhibit calm behaviour. The higher the score, the more prone to anger the child was. The ICC for this variable was .87.

As with the positive characteristics, in order to look at the risk posed by the child's level of irritability before the tsunami, we changed the continuous scores into three categories: low, moderate, and high, based on the percentile scores. A child was considered as having: (1) a low level of irritability (not irritable), if the score was under percentile 34 (2) a moderate level of irritability (moderately irritable), if the score was between percentile 34 and 66; (3) and a high level of irritability (very irritable) if the score was at or above percentile 67. For this variable, the score of percentile 33 was 3, and the score of percentile 67 was 4.

Religious Coping

We distinguished between children who used religious coping and those who did not. A child was regarded as using religious coping if, when having problems, the child prayed, read the Koran, or joined the religious activities in the community (score 1). A child was given a score of 0 when s/he did not show such signs of religious coping. The inter-rater reliability coefficient for this variable was calculated based on the scores (0 or 1) given by the three raters for each child. The Intra-class Correlation Coefficient for religious coping was .94.

Active Participation in Psychosocial Activities

We distinguished between children who actively participated in psychosocial activities and children who did not. A child was regarded as participating actively in psychosocial activities if s/he was actively and regularly involved in psychosocial activities in the community (score 1). A child was given a score of 0 when s/he did not participate in psychosocial activities in the community or did not participate regularly. The inter-rater reliability coefficient for this variable was calculated based on the scores (0 or 1) given by the three raters for each child. The Intra-class Correlation Coefficient for active participation in psychosocial activities was .95.

Environmental Level

Family Support

A family formed a protective factor (score 1) if at least one of the following situations was present: the parents or caregivers guided the children and monitored their school performance, Koran reading and prayer activities; the parents or caregivers were warm and emotionally supportive, enabling the children to express their sadness or other negative emotions, or talk about other problems which they had. When there were none of these situations in the family, the score for family support was 0. The inter-rater reliability coefficient for this variable was calculated based on the scores (0 or 1) given by the three raters for each child. The Intra-class Correlation Coefficient for family support was .95.

Family Threat

A family formed a risk factor (score 1) if at least one of the following situations was present: caregivers or older people in the family were abusive or likely to use violence towards the children; the nature of communication was only one-way, was cold, and the caregiver did not support the children when they expressed their emotions or even forbade them to do so; the caregiver showed signs of distress as a result of the tsunami which negatively influenced the quality of parenting. When there were none of these situations in the family, the score for family threat was 0. The inter-rater reliability coefficient for this variable was calculated based on the scores (0 or 1) given by the three raters for each child. The Intra-class Correlation Coefficient for family threat was .92.

Peers' Support

Peers formed a protective factor (score 1) if at least one of the following situations was present: the child had a friend who could give support when s/he was sad or had problems; the child had a peer group of friends with whom s/he played in various enjoyable activities. If such peers were not available, the score for peer support was 0. The inter-rater reliability coefficient for this variable was calculated based on the scores (0 or 1) given by the three raters for each child. The Intra-class Correlation Coefficient for peer support was .89.

Peers' Threat

Peers formed a risk factor (score 1) if at least one of the following situations was present: the child had a close relationship and intensive activities with older children who were involved in behaviour considered negative or risky by the community; the child was bullied or mocked by friends; the child often had problems or fights with friends or tended to be isolated. When there were none of these situations, the score for peer threat was 0. The inter-rater reliability coefficient for this variable was calculated based on the scores (0 or 1) given by the three raters for each child. The Intra-class Correlation Coefficient for peer threat was .87.

Neighbours' Support

Neighbours were considered to be a support or protective factor (score 1) if there was at least one of the following situations: the child or his/her family received regular support from neighbours; the child often received compliments from his or her neighbours; the neighbours paid attention, took care of the children with gentleness and warmth, guided and monitored the children in a caring way and provided other forms of support needed by the children; the child felt happy / comfortable with his or her neighbours. When there were none of these situations in the neighbourhood, the score for neighbours' support was 0. The inter-rater reliability coefficient for this variable was calculated based on the scores (0 or 1) given by the three raters for each child. The Intra-class Correlation Coefficient for neighbours' support was .91.

Neighbours' Threat

Neighbours were considered to be a threat or risk factor (score 1) if there was at least one of the following situations: the child was isolated from his/her neighbours, or received a negative label from them or was treated in a cynical manner by them; the child felt burdened or highly stressed living with neighbours and/or had fights with them. When there were none of these situations in the neighbourhood, the score for neighbour threat was 0. The inter-rater reliability coefficient for this variable was calculated based on the scores (0 or 1) given by the three raters for each child. The Intra-class Correlation Coefficient for neighbours' threat was .88.

Supportive Relationship with an Adult Mentor

The availability of at least one adult mentor for a child can be a protective factor. A child was listed as having a close relationship with an adult mentor if s/he had regular contact with the mentor, felt close to him/her, and received guidance and support from him/her (score 1). A score of 0 was given to children who did not have such a relationship with an adult mentor. The inter-rater reliability coefficient for this variable was calculated based on the scores (0 or 1) given by the three raters for each child. The Intra-class Correlation Coefficient for the relationship with a mentor was .85.

Cumulative Risk and Protective Factors

We computed a cumulative score for the internal and external risk factors. For the internal aspects, we considered the level of irritability as risk factor, especially a high level of irritability. For the external aspects, we used threat from family, peers, and neighbours as risk factors. These three variables had a dichotomous score for the presence or absence of these threats.

In order to compute the level of irritability score into the cumulative risk score, we needed a dichotomous score. We considered children who had a high level of irritability as having a risk factor (score 1) and children with a low or moderate level of irritability as having no risk factor.

We then added together the scores for the threat from family, peers, and neighbourhood and the level of irritability. The range of the cumulative risk score was from 0 to 4. The higher the score, the more risk factors a child had.

We also computed a cumulative protective score. We added together the scores for religious coping, active participation in social activities, and support from family, peers, neighbours, and mentor. The range of the cumulative protective score was from 0 to 6. The higher the score, the more protective factors a child had.

5.2 Qualitative Analysis

5.2.1 Patterns of Adaptation of the Children

The patterns of adaptation found on the basis of the three levels of functioning (before, immediately after, and one year after the tsunami) will be defined as follows:

Stress Resistance. *Stress Resistance* refers to “patterns of reasonably steady and positive adaptive behaviour in the presence of significant threats” (Masten & Wright, 2009, p. 221). In this study, the Stress Resistance category applied when there was a mild decrease in the level of functioning right after the tsunami, and a return to the pre-tsunami level of functioning within one year. This category is only applicable for adaptive functioning in the ok zone or the optimal zone.

Positive Transformation. According to Masten and Obradovic (2008), the *Positive Transformation* category applies when a child has an improved level of functioning in response to a crisis and its aftermath. In this study, the Positive Transformation category concerned situations in which one year after the tsunami, the child’s level of functioning had improved to a higher level.

Recovered. According to Masten and Obradovic (2008), the *Recovery* category refers to patterns where the individual’s adaptive functioning declines as a result of adversity, but then returns to a positive level. In this study, the Recovered category concerned situations in which a child experienced moderate or severe traumatic grief reactions, but one year after the tsunami the level of functioning had returned to the same level.

Breakdown without Recovery. In this study, the *Breakdown without Recovery* category was used for situations in which a child experienced moderate or severe traumatic grief reactions and/or a decrease in the level of functioning, and one year after the tsunami his or her adaptive functioning had not recovered but had fallen into the maladaptive zone.

Persistent maladaptive. In this study, the *Persistent Maladaptive* category refers to the condition in which before and one year after the tsunami the child's level of functioning was in the maladaptive zone.

Apart from these adaptation pattern categories – that corresponded with five of the eight categories of Masten and Obradovic – we found two new categories not mentioned by them. We named the new categories *Recovering* and *Going-down*.

Recovering. The Recovering category concerned situations in which a child initially experienced moderate or severe traumatic grief reactions and/or a decrease in his or her level of functioning but one year after the tsunami had recovered to a level of functioning that was only one level below his or her pre-tsunami level of functioning.

Going-down. The Going-down category was used for situations in which one year after the tsunami, the level of functioning was more than one level lower than before it but had not fallen into the maladaptive zone. This category was also used for situations in which a child's traumatic grief reactions and/or a decrease in the level of functioning immediately after the tsunami were mild, but whose level of functioning one year after the tsunami remained slightly below his or her previous level.

In Table 9 we present the characteristics of the children with regard to their level of functioning before the tsunami, their traumatic grief reactions and/or decrease in the level of functioning immediately after the tsunami, and their level of functioning one year after the tsunami. By considering the criteria for each pattern and the conditions of the children with regard to the aspects involved, we identified each child's pattern of adaptation.

Table 9. Patterns of adaptation of the children

Name	Level of Functioning Before	Zone	Trauma Reactions Immediately	Level of Functioning One Year	Zone	Category
Fira	6	Optimal	Mild	6	Optimal	Stress Resistance
Hanum	4	Ok	Mild	5	Optimal	Positive transformation
Disa	4	Ok	Moderate	6	Optimal	Positive transformation
Fati	3	Ok	Severe	4	Ok	Positive transformation
Amel	3	Ok	Severe	4	Ok	Positive transformation
Mariana	6	Optimal	Severe	6	Optimal	Recovered
Aning	5	Optimal	Moderate	5	Optimal	Recovered
Yuli	3	Ok	Moderate	3	Ok	Recovered
Riska	4	Ok	Moderate	4	Ok	Recovered
Panji	4	Ok	Moderate	4	Ok	Recovered
Rini	6	Optimal	Moderate	5	Optimal	Recovering
Wahyu	5	Optimal	Severe	4	Ok	Recovering
Ilham	4	Ok	Severe	3	Ok	Recovering
Kaka	6	Optimal	Moderate	4	Ok	Going-down
Riswan	5	Optimal	Severe	3	Ok	Going-down
Titin	4	Ok	Mild	3	Ok	Going-down
Andi	5	Optimal	Severe	1	Maladaptive	Breakdown without recovery
Rifa	4	Ok	Severe	2	Maladaptive	Breakdown without recovery
Deri	3	Ok	Severe	2	Maladaptive	Breakdown without recovery
Komar	3	Ok	Severe	1	Maladaptive	Breakdown without recovery
Jamal	3	Ok	Severe	0	Maladaptive	Breakdown without recovery
Azizah	2	Maladaptive	Severe	1	Maladaptive	Persistent maladaptive

The table above shows us a conspicuous discrepancy: There were twelve children who experienced severe trauma reactions and/or a severe decrease in their level of functioning immediately after the tsunami; but one year after the tsunami, three of them (Fati, Amel, Mariana) had been able to recover to the same level or even had a better level of functioning than before the tsunami, whereas six (Andi, Rifa, Deri, Jamal, Komar, and Azizah) were not able to recover and stayed at the maladaptive level of functioning. Two children (Wahyu and Ilham) were still in the process of recovery and one (Riswan) was slowly decreasing in his level of functioning.

As mentioned previously, adaptation was considered as a continuum, with resilience and vulnerability at opposite ends (Agaibi & Wilson, 2005; Zucker, Wong, Puttler, & Fitzgerald, 2003). Positive patterns of adaptation in the face of adversities refer to a resilience process, and maladaptive

or negative patterns of adaptation to a vulnerability process (Masten & Wright, 2008). Therefore, we can say that children with a Stress Resistance pattern were the most resilient and children with a Persistent Maladaptive pattern were the most vulnerable.

For further analysis, we compressed the seven categories into five, because two categories consisted of only one person (Stress Resistance and Persistent Maladaptive pattern). We assigned these two children to the categories that fitted their patterns of adaptation next best (Positive Transformation and Breakdown without Recovery, respectively). Each of the five patterns of adaptation was given a score ranging from 1 to 5. Score 1 was given to children belonging to the most negative pattern (Breakdown without Recovery) and score 5 to children belonging to the most positive pattern (Positive Transformation).

5.2.2 Children's Trauma Symptoms One Year after the Tsunami

Table 10 presents the result of the TSCC-A regarding the children's level of trauma symptoms one year after the tsunami. The TSCC-A consists of five scales to assess trauma symptoms: Anxiety (ANX), Depression (DEP), Anger (ANG), Post-Traumatic Stress (PTS), and Dissociation (DIS). For each of the children, we reported whether his/her scores on the five scales were normal, subclinical or clinical. The TSCC-A also includes two validity scales: Under-Response (UND) and Hyper-Response (HYP). An UND-score of 70 or more has to be considered as invalid and a score between 65 and 70 has to be interpreted with caution. An HYP-score of 90 or more has to be considered as invalid and a score between 75 and 90 has to be interpreted with caution. With regard to the Under-Response score, we identified four children who had invalid scores and three children whose scores needed to be interpreted with caution (see Table 10). All children scored in the normal range of HYP-scores. Therefore, we did not present the HYP-scores in Table 10.

We also gathered data about children's trauma symptoms by interviews with significant others and by our observations. The trauma symptoms of each child are listed in the informants' report column. Informant's reports were validated by the researchers' observations. The level and intensity of the symptoms were unknown to us because we had not assessed the children's symptoms in a clinical setting in order to minimize harmful effects for the children.

Table 10. Trauma Symptoms One Year After the Tsunami

Name	ANX	DEP	ANG	PTS	DIS	UND	Informants' report
Fira	Sub-clinical	Normal	Normal	Normal	Normal	Normal	Normal
Hanum	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Disa	Normal	Normal	Normal	Normal	Normal	Normal	Sad, anxious
Fati	Normal	Normal	Normal	Normal	Normal	Invalid	Day-dreams
Amel	Normal	Normal	Normal	Normal	Normal	Invalid	Sad, day-dreams
Mariana	Normal	Normal	Normal	Sub-clinical	Normal	With-caution	Sad
Aning	Normal	Normal	Normal	Sub-clinical	Normal	Normal	Sad, anxious
Yuli	Normal	Normal	Normal	Normal	Normal	Normal	Sad, hostile
Riska	Normal	Normal	Normal	Normal	Normal	Normal	Sad, irritable, anxious
Panji	Normal	Normal	Normal	Normal	Normal	Normal	Anxious
Rini	Normal	Normal	Normal	Normal	Normal	Normal	Sad
Wahyu	Normal	Normal	Normal	Normal	Normal	Normal	Sad
Ilham	Normal	Normal	Normal	Normal	Normal	Normal	Sad
Kaka	Normal	Normal	Normal	Normal	Normal	Normal	Sad
Riswan	Normal	Normal	Normal	Normal	Normal	Normal	Strong anger
Titin	Normal	Normal	Normal	Normal	Normal	Normal	Sad
Andi	Normal	Sub-clinical	Clinical	Sub-clinical	Normal	Normal	Depressed, anger
Rifa	Normal	Normal	Normal	Normal	Normal	Invalid	Sad, hostile
Deri	Normal	Normal	Normal	Normal	Normal	Normal	Sad, anxious
Komar	Normal	Normal	Normal	Normal	Sub-clinic	With caution	Irritable, day-dreams
Jamal	Normal	Normal	Normal	Normal	Normal	Invalid	Passive-aggressive, sad, day-dreams
Azizah	Normal	Normal	Normal	Normal	Normal	With caution	Sad, anxious

From the table above, we see that based on the TSCC-A, most of the children had a normal level on all trauma symptoms scales. There were four children (Fira, Mariana, Aning, and Komar) whose trauma symptoms were at a sub-clinical level on one of the following scales: Anxiety, PTS, or Dissociation. One child (Andi) had a clinical level on the Anger scale and a sub-clinical level on the Depression and PTS scales. The TSCC-A scores of four children (Fati, Amel, Rifa, and Jamal) had to be considered invalid, because their Under-Response *T* scores were at or above 70. Three children (Mariana, Komar, and Azizah) had an Under-Response score at a sub-clinical level indicating that their report on their trauma symptoms needed to be interpreted with caution.

If we look more closely at each item of the TSCC-A, we found that regarding the Anxiety scale, many of the children were often or sometimes afraid of many things and of bad things that might happen to them. However, for other specific situations (such as fear for men, women, or being killed) they did not show strong symptoms of anxiety. If we combine this result with the informants'

reports, we may conclude that the children were especially afraid for another tsunami. This was especially apparent in their reactions when there were rainstorms.

Regarding the Depression symptoms, most of the children sometimes or often felt sad and unhappy. Some of them often cried. However, their feelings of depressive cognitions such as guilt and self-denigration did not appear in their responses on the Depression scale. One specific depressive symptom for these children was the feeling that they were sinful. This may be related to the religious norms in Aceh. If combined with the information from the informants and from our observations, we may conclude that the sadness and unhappiness often resulted from their grieving about their lost loved ones. Several children (Kaka, Syahril, Ilham, Deri, and Wahyu) even suffered unfinished grieving.

With regard to Anger symptoms, if we look into the details, we found that common symptoms of the children's anger were rebelliousness towards adults, unruly or boisterous behaviour, and fighting with friends. One child (Andi) exhibited almost all symptoms of anger and scored clinical on the Anger scale. Most of the children did not feel that they were bad or that they hated other people.

Regarding the Post-traumatic stress (PTS) symptoms, most of the children often had nightmares and intrusive memories that they did not want to remember. However, they did not exhibit other symptoms of PTS such as fear for men or women, and cognitive avoidance of painful feelings was less often apparent.

The most common signs of Dissociation were daydreaming and forgetting many things. Other symptoms such as emotional numbing, pretending to be someone else or somewhere else, and dissociative avoidance were less common.

Amel, Fati, Rifa and Jamel had an invalid Under-Response score. Because their TSCC-A scores could not be interpreted, we provide information about these four children according to the information from their significant others and from our observations.

On the basis of careful observations and interviews with Amel's eldest sister, who took care of her, we understood that Amel remained sad because of losing her mother and sister. She was also still anxious, yet she tried to deny her remaining negative emotions and to control her negative feelings in order to behave well. She functioned well in daily life, although she sometimes daydreamed. However, there were no complaints from others about her behaviour. She was even perceived as a strong person since her daily behaviour was better than before the tsunami. Her invalid response might indicate repressed emotions, avoidance, or an attempt to appear that she was fine.

Fati often daydreamed and looked gloomy, especially when he was alone at home. However, when he played with friends, he looked happy and cheerful. He would tell people when they asked about the tsunami, but never disclosed his feelings. He became irritated when people repeatedly asked how he felt. He seemed to repress his feelings a great deal. Though he suffered very bad experiences and loss because of the tsunami, his performance was better compared to his behaviour before the tsunami

Rifa showed symptoms of regression and only wanted to play with and behave like children far below her age. She was irritable and easily became angry. She still felt very sad about losing her mother, and because of the abusive behaviour of her father, her sadness and anger got even stronger. Complaints about her behaviour came from her siblings and adults.

Jamal was also very sad, and one year after the tsunami, people who knew him before the tsunami thought that his personality had changed. He became passive yet aggressive, withdrew himself from friends and avoided joining in activities. He showed strong signs of avoidance and repression, and some dissociative symptoms such as daydreaming. He felt very lonely and experienced psychosomatic complaints. His clinical Under-Response score confirmed his mechanisms of avoidance and repression in dealing with his traumatic experiences.

Other interesting results were found for Fira, Mariana, and Aning who had the two most positive patterns of adaptation (Positive Transformation and Recovered pattern). They all had a sub-clinical level of one of the symptoms (Anxiety or PTS). Their Anxiety and PTS symptoms were not visible, because their symptoms were mainly nightmares and intrusive thoughts.

Mariana was still grieving after one year and she continued to cry whenever she remembered her brothers. Aning also remained sad and felt hurt, but did not overtly express her emotions. Both of them reported sub-clinical PTS in the form of nightmares and intrusive thoughts or memories that they did not like or want to remember. They often remembered bad and frightening things that had happened to them. However, their PTS symptoms did not disturb their performance in daily activities.

Fira reported that she was worried and easily afraid of many things. However, these symptoms were not clearly visible in her daily performance. According to her mother and aunt, she was very tough and already within a week after the tsunami, she did not cry at all anymore. Her significant anxiety symptoms did not disturb her daily level of functioning.

Other specific trauma responses of the children were their psychosomatic complaints. According to their reports, only one child never became sick or had headaches, stomach ache, or other health problems. Other children reported that they sometimes, often, or very often became sick, or had headaches, and stomach ache.

5.2.3 Children's Patterns of Adaptation and their Bio-ecological Systems

Within-group Analysis

In order to give a more detailed explanation of the children's patterns of adaptation, we applied a *within-group* analysis. We addressed the proximal processes that were considered important in influencing the patterns of adaptation for children of each pattern separately. We analyzed the specific characteristics of the children in each pattern regarding the presence of risk and protective factors in their proximal environment. We employed proximal process analysis by observing and comparing the stories and proximal characteristics of the children within the same pattern.

a. Positive Transformation Pattern of Adaptation

Figure 3 shows the pattern of adaptation of the five children: Fira (girl, 12 year), Hanum (girl, 15 years), Disa (girl, 11 years), Fati (boy, 10 years), and Amel (girl, 11 years) in the Positive Transformation pattern. We present the children's level of functioning before the tsunami, the loss of loved ones, the traumatic grief reactions and/or decrease in the level of functioning immediately after the tsunami, the point at which they began to recover, and the level of functioning one year after the tsunami.

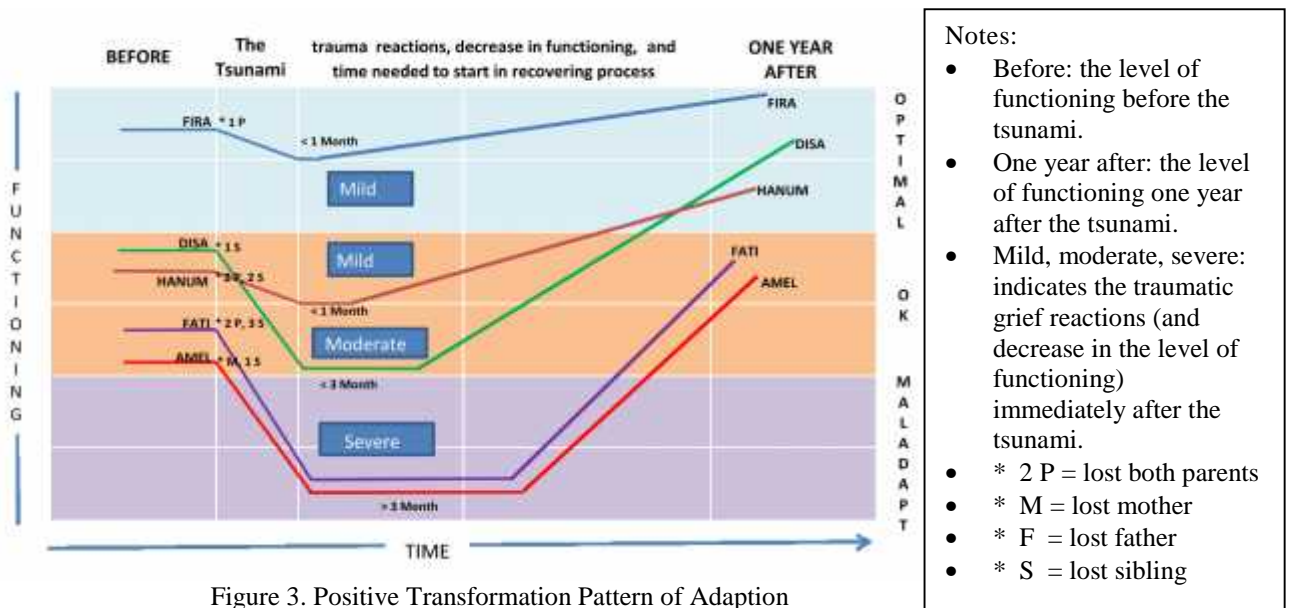


Figure 3. Positive Transformation Pattern of Adaption

Table 11 shows the changes in the domains of functioning before and one year after the tsunami that led us to categorize these five children as having a positive transformation pattern of adaptation.

Table 11. Changes in the domains of functioning before and after the tsunami for children with a Positive Transformation pattern of adaptation

Child	Before the Tsunami				One Year after the Tsunami			
	School	Peers	Family	Functioning Score	School	Peers	Family	Functioning Score
Fira	Good	Good	Good	6	Good	Good	Good	6
Hanum	Average	Average	Average	4	Average	Good	Average	5
Disa	Good	Average	Average	4	Good	Good	Good	6
Fati	Average	Average	Average	3	Average	Good	Average	4
Amel	Average	Average	Average	3	Average	Average	Good	4

One year after the tsunami three children (Hanum, Disa, and Fati) had achieved an improved level of social functioning with peers and two (Disa and Amel) were better in their family functioning.

One child (Fira) had the same scores before and after the tsunami, but because her raters opined that she functioned even better after the tsunami than before, there must have been a ceiling effect (6 is the maximum score).

On the basis of the detailed information we gathered about the proximal characteristics of these children (see Table 12), we found several factors that could explain why Fira, Hanum, Disa, Fati, and Amel were able to positively transform their level of functioning after such massive devastation and significant loss.

Table 12. Proximal characteristics of the children with a Positive Transformation pattern

	Fira	Hanum	Disa	Fati	Amel
Individual characteristics before the tsunami					
Sociability	High	High	High	High	Moderate
Obedience	Moderate	Moderate	High	Low	Moderate
Pro-social tendency	High	High	High	Moderate	Low
Enthusiasm	High	High	High	Moderate	Moderate
Irritability	Moderate	High	Moderate	Moderate	High
Changes in the structure of the family; risk and protective factors from family after the tsunami					
Number and the loved ones lost	1 (father)	1 (brother)	4 (2 parents, 2 sisters)	5 (2 parents, all 3 siblings)	2 (mother, 1 sister)
Caregiver after the tsunami	Mother	Both parents	Grandmother, aunt, uncle	Aunt, uncle, elder cousins	Eldest sister
Family support	Yes	Yes	Yes	Yes	Yes
Family threat	No	No	No	Yes	Yes
Protective factors from internal and external aspects					
Religious coping	Yes	Yes	Yes	Yes	Yes
Active participation	Yes	Yes	Yes	No	Yes
Peers' support	Yes	Yes	Yes	Yes	Yes
Neighbours' support	Yes	No	Yes	Yes	No
Supportive mentor	Yes	Yes	Yes	No	No
Risks from the community					
Peers' threat	No	No	Yes	Yes	No
Neighbours' threat	No	No	No	No	Yes

Individual Characteristics before the Tsunami

With regard to the individual characteristics before the tsunami, these children had a moderate or high level of sociability and enthusiasm, and a moderate or high level of irritability. They had a low, moderate, or high level of obedience and pro-social behaviour. Overall, three children in the optimal zone (Fira, Hanum, and Disa) had a high level of sociability, pro-social behaviour, and enthusiasm.

Changes in the Structure of the Family

Three children (Disa, Fati, and Amel) experienced a very significant loss and changes in the structure and relationships in their families. Fati lost all his family members; Disa lost both parents and two of her siblings; and Amel lost her mother and youngest sister, and her father very soon abandoned the family. Therefore, the structure of the family was significantly changed.

However, the changes in the structure of the family seemed to have influenced these children positively. Before the tsunami, Fati's parents were very busy and sometimes maltreated him. Disa experienced almost the same. Her father was paralyzed so that he was not able to function normally, while her mother was very demanding and often punished the children both verbally and physically.

Before the tsunami, Amel had experienced a parenting style that differed from the parenting style experienced by Fati and Disa. Her parents were very permissive towards her. Amel's mother handled almost all of the family's responsibilities, including acting as breadwinner, so that she did not have enough time to guide Amel and to provide her with appropriate discipline. Amel's mother only pushed her elder daughter to help her but never asked Amel or her sons to do so. Therefore, Amel became an egoistic and dependent girl. Amel's father did not care about his family. He often left home without good reasons and did not earn enough money to support his family.

After the tsunami, the new caregiver(s) of Fati, Disa, and Amel used a different approach or parenting style. Their caregiver(s) provided more protection (care, guidance, attention, monitoring, and discipline) than their parents did before the tsunami. We may say that before the tsunami, the parents of Fati, Disa, and Amel failed to provide their children with appropriate guidance and discipline and were risk factors for them, while after the tsunami, the caregiver(s) turned out to have protective roles.

Losing parents (and also siblings) was very traumatic for these children and it was understandable that they all experienced significant traumatic grief reactions and/or a moderate or severe decrease in their level of functioning immediately after the tsunami. However, the presence of the new caregiver(s), who were very attentive, gave guidance, and conducted monitoring for daily activities (in academic matters, prayer activities, and relationships with peers), helped these children to recover and to have a more positive orientation and move on from their traumatic grief reactions. The new and protective parenting styles, together with other protective conditions experienced by the children, gave them the opportunity to adapt to the new situation in a positive way.

As the interaction between children and caregiver(s) is reciprocal, the changes in one party will reciprocally influence the other party's behaviour. The good parenting styles of the new caregivers helped us to understand why Disa and Amel showed an improved level of family functioning. Fati was not improving in his family functioning because he had a problem with his aunt, who was very strict in the implementation of her rules. However, his uncle and his cousins, who were much older than Fati, showed him care and attention and assisted him in a gentler way to balance the strict approach of his aunt.

Fira and Hanum had a different experience regarding parenting style and changes in the structure of the family. Fira lost her father, but may not have felt the loss so much because he lived in another city and she rarely met him. Hanum did not lose her caregiver. Before and after the tsunami, Fira's mother and Hanum's parents showed care and gave them appropriate guidance. Hanum and Fira's positive transformation may therefore be better explained with regard to other protective factors.

Protective Factors from Internal and External Aspects

With regard to the protective factors from internal aspects, they all used religious coping, and four of them actively participated in psychosocial activities. Regarding the protective factors from external aspects, they all received peers' support and, in addition, three of them (Fira, Disa, and Fati) received support from neighbours, and three (Fira, Hanum, and Disa) a supportive relationship with an adult mentor.

Hanum's positive transformation was due to the improvement in her social functioning with her peers. Hanum was originally from Pulo Aceh, a remote island with limited psychosocial activities and limited chances to meet and play with peers in various activities. In Terbeh, she had many opportunities to play and to learn many new things together with her peers through the presence of the UNICEF Children's Centre, which was available seven days every week, PKPA (*Pusat Kajian dan Perlindungan Anak*: Centre for Study and Child Protection), and many other institutions. She was also encouraged to involve herself in many religious activities with her peers. These conditions improved the quality of her relationship with her peers. In addition to these factors, Hanum's positive transformation was also influenced by her family situation. Unlike the other four children, she did not lose her caregivers (although she lost her elder brother), she lived with both parents and five elder brothers, and she also had a supportive relationship with an adult mentor from her active participation in psychosocial programs.

With regard to the role of supportive adult mentors, we found that the three children in the optimal zone (Fira, Disa, Hanum) had a supportive adult mentor, while the two in the ok zone (Fati and Amel) did not. A stable and supportive relationship with an adult mentor may have contributed to the children's improvement, especially for those in the optimal zone. In addition to other protective factors, three children (Fira, Disa, and Fati) also received support from their neighbours because many of their close neighbours were extended family members. Disa and Fati had lost (almost) all family members but were taken good care of by their extended families and other neighbours. Hanum and Amel did not receive support from neighbours because none of their extended family members lived close by and they only knew very few members of the community.

Risk Factors from Peers and Neighbours

Regarding the threat from peers and neighbours, Disa and Fati experienced threat because they were both orphans. Children in Aceh often mock other children who are orphans. Disa and Fati felt hurt and excluded when peers mocked them. Disa usually told her grandmother about this and Fati often became angry with children who mocked him. Amel's family received threat from their neighbours because they were not originally from Lambaro Skep. They did not receive regular ration distribution as often as other families and they experienced uncertainty regarding the building of a house for them. Amel did not feel bad about this because she was unaware of the issue; but she was indirectly influenced by this situation because she did not receive enough resources to fulfil her basic needs after the tsunami. The other three children did not experience neighbours' threat. Threat from peers and neighbours did not seem to have a serious impact on these children because they had more friends or peers who supported them.

Considering the above conditions, we can conclude that the significant factors that seem to have enabled Disa, Fati, and Amel to have a Positive Transformation pattern of adaptation were the positive changes in their parental conditions. Before the tsunami, they experienced little support and significant threat from their parents, whereas after the tsunami, it was the other way around. These positive changes in support provided by the caregiver(s) after the tsunami may have lessened their traumatic grief reactions, strengthened their capacity to overcome their problems, and improved their family functioning.

Additional factors that may have enhanced their improvement were their coping strategies: the use of religious coping and active participation in psychosocial activities. They also received support from peers. All of these three factors are likely to have strengthened their ability to adapt to the many changes in their lives, and especially to increase their ability in social functioning with their peers.

Neighbours' support and relationships with adult mentors were not always present in the case of these children. However, two children (Hanum, and Disa), whose level of functioning increased from the ok zone to the optimal zone, had stable and supportive relationships with adult mentors; but the other two children (Fati and Amel), who improved within the ok zone, did not. This suggests a role of adult mentors in the improvement of the children's ability to adapt to changes in their lives.

Peers' threat and neighbours' threat did not seem to have a very negative impact, probably because the children also received protection from peers, neighbours or mentors. Their individual characteristics before the tsunami (especially their positive characteristics) might also be an important factor for them, especially for the children who positively transformed to the optimal zone. These children (Fira, Hanum, and Disa) tended to have a higher level of positive characteristics than the other two (Fati and Amel) who were in the ok zone.

b. Recovered Pattern of Adaptation

Figure 4 shows the pattern of adaptation of the five children: Mariana (girl, 12 years), Aning (girl, 11 years), Yuli (girl, 13 years), Riska (girl, 11 years), and Panji (boy, 12 years), in the Recovered pattern of adaptation. We present the children's level of functioning before the tsunami, the loss of loved ones, the traumatic grief reactions and/or decrease in the level of functioning immediately after the tsunami, the point at which they began to recover, and the level of functioning one year after the tsunami.

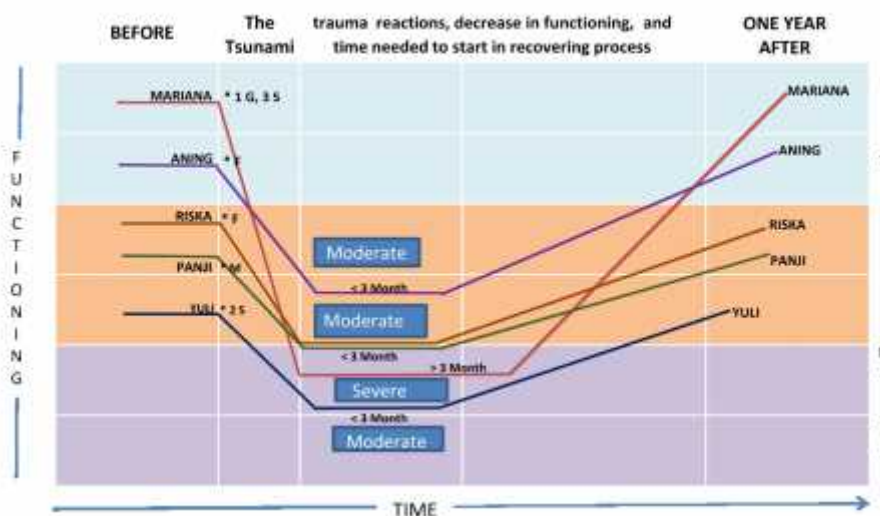


Figure 4. Recovered Pattern of Adaptation

Notes:

- Before: the level of functioning before the tsunami.
- One year after: the level of functioning one year after the tsunami.
- Mild, moderate, severe: indicates the traumatic grief reactions (and decrease in the level of functioning) immediately after the tsunami.
- * 1 G = lost 1 grandparent
- * M = lost mother
- * F = lost father
- * S = lost sibling

Table 13 shows the changes in the domains of functioning before and one year after the tsunami that led us to categorize these children as having a Recovered pattern of adaptation. All five children recovered to the same level as before, which was the optimal zone for two children and the ok zone for three.

Table 13. Changes in the domains of functioning before and after the tsunami for children with a Recovered pattern of adaptation

Child	Before the tsunami				One year after the tsunami			
	School	Peers	Family	Functioning score	School	Peers	Family	Functioning score
Mariana	Good	Good	Good	6	Good	Good	Good	6
Aning	Good	Good	Average	5	Good	Good	Average	5
Yuli	Average	Average	Average	3	Average	Average	Average	3
Riska	Average	Good	Average	4	Average	Good	Average	4
Panji	Average	Good	Average	4	Average	Good	Average	4

On the basis of the detailed information we gathered about the proximal characteristics of these children (see Table 14), we found several factors that could explain why Mariana, Aning, Riska, Yuli, and Panji were able to recover to their previous level of functioning after the massive devastation and significant loss caused by the tsunami.

Table 14. Proximal characteristics of the children with a Recovered pattern of adaptation

	Mariana	Aning	Yuli	Riska	Panji
Individual characteristics before the tsunami					
Sociability	High	High	Low	High	Moderate
Obedience	High	High	Low	Moderate	Moderate
Pro-social tendency	High	High	Low	Moderate	High
Enthusiasm	High	High	Low	Moderate	Moderate
Irritability	Low	Moderate	High	High	Moderate
Changes in the structure of the family; risk and protective factors from family after the tsunami					
Number and the loved ones lost	4 (grandmother, 3 brothers)	1 (father)	2 (1 sister, 1 brother)	1 (father)	1 (mother)
Caregiver after the tsunami	Both parents	Mother	Both parents	Mother	Father, stepmother
Family support	Yes	Yes	Yes	Yes	Yes
Family threat	No	Yes	Yes	No	No
Protective factors from internal and external aspects					
Religious coping	Yes	Yes	Yes	Yes	Yes
Active participation	Yes	Yes	Yes	Yes	Yes
Peers' support	Yes	Yes	Yes	Yes	Yes
Neighbours' support	Yes	No	No	Yes	No
Supportive mentor	Yes	Yes	No	Yes	Yes
Risks from the community					
Peers' threat	No	Yes	Yes	Yes	No
Neighbours' threat	No	No	No	No	No

Individual characteristics before the tsunami

The children showed various levels of individual characteristics before the tsunami, but the tendency was for the children in the optimal zone (Mariana and Aning) to have higher levels of sociability, obedience, enthusiasm, and pro-social behaviour, and a lower level of irritability than the children in the ok zone (Yuli, Riska, and Panji). Mariana and Aning were very sociable, obedient, enthusiastic, and pro-social. Aning was moderately irritable but Mariana was not. In contrast, Yuli was not sociable, not obedient, not pro-social, and not enthusiastic, and she was very irritable. Riska and Panji were moderately obedient and enthusiastic. Riska was very irritable but Panji was less so.

Changes in the Structure of the Family

None of the children in this pattern lost both parents. Four of them lost one caregiver (father, mother, or grandmother) and two of the children also one or more siblings. One child did not lose any

caregiver, but lost two of her siblings. After their loss, they all lived with at least one of their parents. Two children (Mariana and Yuli) even lived with both their parents. Therefore, although the structure of the family had changed, the changes were not as drastic as in the case of the children in the Positive Transformation category.

The surviving parent(s) of these children had a close relationship with them before and after the tsunami. Mariana's parents had an even closer relationship with her after the tsunami. Thus, after the tsunami, Mariana, Aning, Riska, Yuli, and Panji all had supportive caregiver(s) because they had at least one parent with whom they had a close relationship. All the surviving caregiver(s) were attentive to the children and provided them with guidance and monitoring of their daily activities (in academic matters, prayer activities, and relationships with peers). These conditions contributed significantly to the way in which they were able to recover from their moderate or severe traumatic grief reactions and to adapt positively.

Two children experienced threat from family: Aning's mother prevented her from expressing her sadness about losing her father, while Yuli's father showed a tendency to depression and was less communicative with Yuli than before the tsunami. However, in both cases the support from parent(s) was greater than the threat. Aning's mother was very supportive in academic matters and she was very attentive and provided all Aning's educational needs. Yuli's mother covered the needs that could not be provided by her father. She was caring and attentive and Yuli could share her problems with her. She also handled and monitored Yuli's education and daily activities. Panji's father remarried but it did not bother Panji and he developed a close relationship with his stepmother.

Protective Factors from Internal and External Aspects

The children's coping strategy may also have been an important aspect of their recovery processes. All children in the Recovered pattern used religious coping. When they felt sad or remembered their loved ones, they prayed or recited verses from the Koran to make them feel better. For these children, religious coping was not only related to their personal relationship with God but also related to their social interactions. Besides praying individually, they were also involved in praying and Koran-reading activities with their family at home or with friends in the community. Being connected with their cultural roots and praying together with family, friends, and other members of the community may have helped the children to feel that they were not suffering alone. Through their involvement in religious activities in the community, they usually received positive appraisal from adults.

All children in the Recovered pattern actively participated in psychosocial activities. The presence of various institutions with many psychosocial activities in the community provided more opportunities for the children to access available support. When they felt sad, they joined the activities, met their friends or learned many interesting lessons, and felt better as a consequence. The chance to meet friends and others in communal religious activities or psychosocial activities also

increased their sense of togetherness and mutual support, and these advantages may have alleviated the sadness or other trauma symptoms that resulted from the tsunami.

One of the programs in these villages (Terbeh, Lambaro Skep, and Tanjong) in which all children in this category actively participated was traditional dance. They received many advantages by joining these traditional dance activities. Mariana, for example, experienced a very positive impact through her involvement in psychosocial programs, especially traditional dance activities. Her mother said that before joining the traditional dance activities set up by a women's institution in Terbeh four months after the tsunami, she was still deeply impacted by the tsunami and was reluctant to go out of the tent. However, after joining the traditional dance activities and taking part in a performance in front of people in the community, she started to be more active and was able to smile again. From that time, she experienced an accelerated improvement, adapted positively, and regained her previous level of functioning.

In addition to these coping strategies, they all received peer support. In combination, these three aspects (religious coping, active participation in psychosocial programs, and peer support) must have had a significant influence on the recovery process, especially in making the children feel more comfortable and enabling them to receive the significant support needed for their adaptation.

With regard to the support from a mentor, four of five children (except Yuli) had a stable and supportive relationship with an adult mentor. The presence of these mentors and their supportive approach to these children were probably very important for their recovery process during the year after the tsunami. Regarding the support from neighbours, two children (Mariana and Riska) received support but three did not. Therefore, neighbours' support was not present in the recovery process of all the children, but because they received support from adult mentors and psychosocial institutions, these factors must have been enough to facilitate their recovery process.

Risk Factors from Peers and Neighbours

Aning and Riska experienced peers' threat in the form of mockery because they no longer had fathers. Yuli's peers often stimulated a fight or quarrel. It is interesting that none of them experienced neighbours' threat. It is important to note that although not all children received support from neighbours, as long as they did not experience neighbours' threat, there was a possibility of recovering fully.

On the basis of the above descriptions, we may conclude that there were significant factors that enabled these children to recover fully from the considerable decrease in their level of functioning. The first factor was the availability of at least one of their parents and a positive parent-child relationship after the tsunami, characterized by a supportive parenting style. Even though these children were not free from threat resulting from their parents' psychological condition after the tsunami, the presence of threat was not a major risk for them because the support (protection) from their parents was greater than the threat (risk).

The second factor (and this seemed to be very important) was the combination of religious coping, active participation in psychosocial activities, and peers' support. These three aspects became protective factors for these children as explained above. The third factor was that four of them also had a stable and supportive relationship with an adult mentor who was their mentor in psychosocial activities. Another factor was that none of them experienced neighbours' threat and thus most of them experienced less threat over all (family, peers, and neighbours).

Their individual characteristics before the tsunami were also important. Both children who had recovered to the optimal zone tended to have a higher level of sociability, obedience, pro-social behaviour, and enthusiasm than the three children who had recovered to the ok zone. The level of irritability of the children in the optimal zone was lower than that of those in the ok zone.

c. Recovering Pattern of Adaptation

Figure 5 shows the pattern of adaptation of the three children: Rini (girl, 12 years), Wahyu (boy, 12 years), and Ilham (boy, 13 years) in the Recovering pattern. We present the children's level of functioning before the tsunami, the loss of loved ones, the traumatic grief reactions and/or decrease in the level of functioning immediately after the tsunami, the point at which they began to recover, and the level of functioning one year after the tsunami.

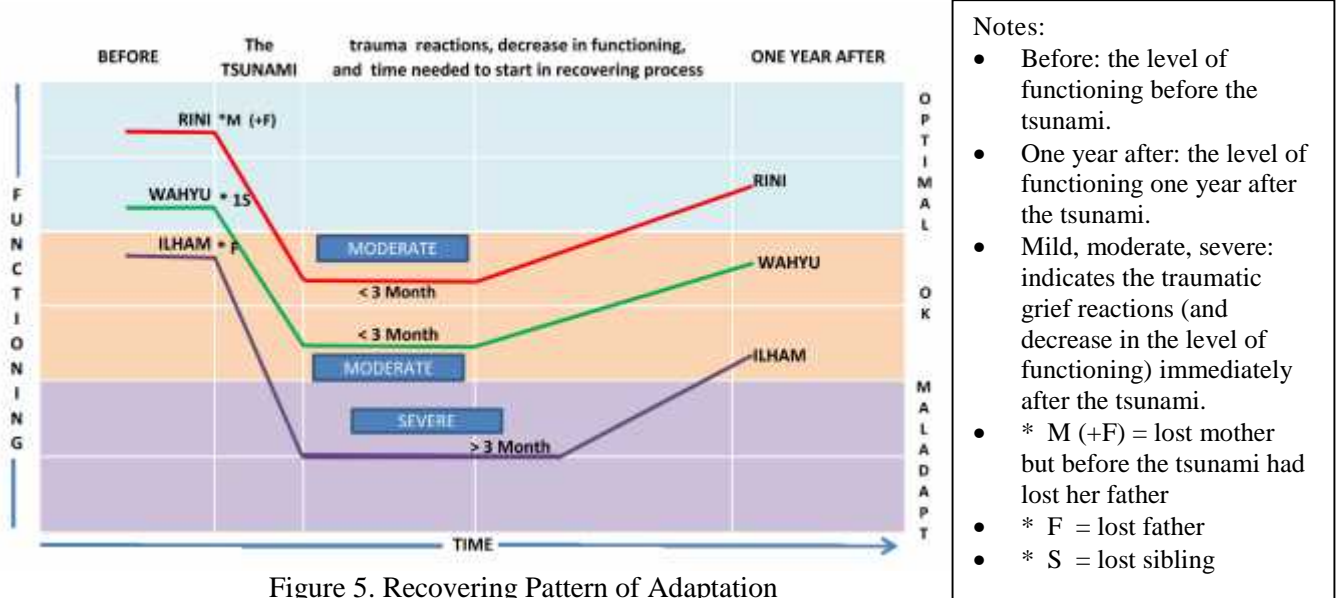


Figure 5. Recovering Pattern of Adaptation

Table 15 shows the changes in the domains of functioning before and one year after the tsunami that led us to categorize them as having a Recovering pattern of adaptation.

Table 15. Changes in the domains of functioning before and after the tsunami, for children with a Recovering pattern of adaptation

Child	Before the tsunami				One year after the tsunami			
	School	Peers	Family	Functioning score	School	Peers	Family	Functioning score
Rini	Good	Good	Good	6	Good	Average	Good	5
Wahyu	Good	Average	Good	5	Average	Average	Good	4
Ilham	Average	Average	Good	4	Average	Average	Average	3

By definition, all children in this category had a total level of functioning slightly below their previous level, but they all had trouble in a different domain: one child (Rini) was struggling in social functioning with peers, one (Wahyu) in academic functioning and one (Ilham) in family functioning.

Using as a basis our description of the proximal characteristics of these children (see Table 16), we found several factors that could explain why, after one year, Rini, Wahyu, and Ilham were still struggling to reach their previous level of functioning.

Table 16. Proximal characteristics of the children in the Recovering pattern

	Wahyu	Ilham	Rini
Individual characteristics before the tsunami			
Sociability	High	Moderate	Moderate
Obedience	Moderate	High	High
Pro-social tendency	High	High	High
Enthusiasm	Moderate	Moderate	High
Irritability	High	Moderate	Low
Changes in the structure of the family; risk and protective factors from family			
Number and the loved ones lost	1 (brother)	1 (father)	1 (mother) but father had passed away a year before the tsunami
Caregiver after the tsunami	Mother	Both parents	Grandmother, aunt, uncle
Family support	Yes	Yes	Yes
Family threat	Yes	Yes	Yes
Protective factors from internal and external aspects			
Religious coping	Yes	Yes	Yes
Active participation	Yes	Yes	Yes
Peers' support	Yes	Yes	Yes
Neighbours' support	Yes	Yes	No
Supportive mentor	No	No	Yes
Risks from the community			
Peers' threat	No	Yes	Yes
Neighbours' threat	No	No	Yes

Individual Characteristics before the Tsunami

Ilham and Rini were very obedient and moderately sociable. Wahyu was very sociable and moderately obedient. All of them were very pro-social. Rini was very enthusiastic; and Wahyu and Ilham were less so. With regard to their level of irritability, Wahyu was very irritable, Ilham was moderately irritable, and Rini was not irritable.

Changes in the Structure of the Family

The three children in the Recovering pattern had specific characteristics regarding the loss of their loved ones and the changes in the family structure that differentiated them from the first two categories. First, the surviving parents of Wahyu and Ilham had not accepted the death of their loved ones because their bodies were not found. Second, Wahyu's parents and Ilham's mother still tried to find the missing family member without result, so that they were in a depressed condition because of this uncertainty and unresolved traumatic grief. Wahyu and Ilham were badly influenced by the depressed state of their parent(s) and also had difficulties in accepting the death of their loved ones. In this situation, the surviving caregiver(s) posed a risk to their children because their depressive mood influenced Wahyu and Ilham negatively. For Ilham, this condition contributed to the decrease in his family functioning, and for Wahyu, this condition influenced the decrease in his academic functioning.

Rini also had difficulties in accepting the death of her mother, and also that of her father (who died before the tsunami). She liked to imagine that her mother came (and sometimes she thought her mother met her in her dreams) and asked her to do something. This was good for her because it made her very conscientious about what her mother asked her to do (usually to take care of her siblings and be a good or strong girl); but when she realized that she was alone without her parents, she started to cry and mourn. Her new caregivers (her aunt and uncle) were kind but they did not stay permanently with her and her siblings. Her aunt and uncle lived in Sabang, which is very far from Lampineung village, so that they stayed with her for only two weeks every month. This situation left Rini feeling very lonely and sad, and she badly missed her parents because every two weeks she had to handle and take care of all the domestic chores, including taking care of her younger siblings, even though she was only 12 years old. In addition, her elder brother often complained and was easily angered without offering any help. Therefore, Rini was often sad and often felt alone, but was happy when her aunt came, because she regarded her aunt as a second mother.

Nevertheless, even though the children in the recovering pattern had difficulties in accepting the deaths of their loved ones, their surviving parent(s) or new caregivers were very attentive to all of them. Wahyu's parents, Ilham's mother, and Rini's aunt were all very kind, attentive, and caring towards them. After the tsunami, they all had close relationships with their caregivers, and this was very helpful in protecting the children when they experienced negative emotions or uncomfortable situations.

To conclude, Wahyu, Ilham, and Rini experienced threat from their caregivers, but they also received emotional and material support from them. The threat prevented them from recovering sooner, but the support protected them from a further decrease in their level of functioning.

Protective Factors from Internal and External Aspects

All three children in the Recovering pattern used religious coping, actively participated in psychosocial activities, and received peers' support. These factors appear to have been very helpful in their recovery process.

Wahyu and Ilham lived in Tanjong, where religious activities and psychosocial programs were easily accessible because they were combined with the activities of a local organization handled by a group of young people in the village. Religious life was strong and solid, and there were also many psychosocial programs offering various enjoyable activities. They had traditional dance group activities and both Wahyu and Ilham joined this group. Peers were also part of their support system because the village had many communal activities, so that there were more opportunities for them to meet their peers in a constructive way.

The use of religious coping, their involvement in psychosocial activities, and the support from their peers must have protected Wahyu and Ilham from a further decrease in their level of functioning caused by the loss of their loved ones, unresolved traumatic grief reactions, and parental threat. These three protective factors not only shielded both of them from a further decrease in their level of functioning, but also helped in the recovery process. The frequent opportunities to be involved in religious activities, psychosocial activities, and especially traditional dance activities, made them feel happier and alleviated their sadness and other negative emotions.

Rini experienced a slightly different situation. Lampineung had limited communal religious activities and psychosocial programs. However, this did not prevent Rini from participating actively in religious as well as psychosocial activities conducted in her village. She did not join a traditional dance group because there was no such program, but she prayed and recited verses from the Koran both individually and together with her peers.

With regard to the support from neighbours and an adult mentor, Wahyu and Ilham had as close neighbours members of their extended family who supported them, but they did not have stable and supportive relationships with a mentor. Rini had one particular adult neighbour as a mentor, but she did not receive any support from other close neighbours because she did not have extended family members as her close neighbours. The presence of such support was helpful for Wahyu, Ilham, and Rini for their process of adaptation, because when they experienced threat from their family members they were able to access alternative support from other adults in the community.

Risk Factors from Peers and Neighbours

Ilham and Rini experienced peers' threat, because children often mocked or bullied those who did not have a father or who had lost both parents. Being mocked as 'anak yatim' (orphans) hurt Ilham and Rini very much, especially because they still had difficulties in accepting the death of their parents. For Rini, peers posed significant threats, because boys not only mocked her for being an orphan but also said that she was ugly. She was very badly affected by peers' threat so that she experienced a decrease in her social functioning with peers.

Rini also received threat from her neighbours. Several times they came to Rini and criticized her because her house was messy and dirty and they blamed her for that. Rini was very annoyed by this situation. Wahyu and Ilham did not experience neighbours' threat.

On the basis of the above descriptions, we may conclude that after one year, none of these three children had fully recovered yet for several reasons. First, related to the absence or depressed condition of their parents or caregivers, these children had difficulty in accepting the death of loved ones. Therefore, the family posed risk for these children. Nevertheless, because they still had a close relationship with their parents, the family also gave them protection.

Second, related to the threat from peers and neighbours, the presence of risk from peers and neighbours was potentially disturbing for their process of adaptation. Nonetheless, the available support from peers and neighbours or mentors was protective for them.

With regard to their coping strategies, their decision to use religious coping and participate actively in psychosocial activities was protective for them. They had at least one protective factor from their positive characteristics because they were all very pro-social, a characteristic that is highly appreciated in the Acehese community.

To conclude, these children encountered many risks or threats from family, peers, and neighbours; but there were also significant protective factors from family, neighbours or mentors, and peers, and at the personal level from their coping strategies and individual characteristics. The threat prevented them from recovering sooner and sometimes caused them to feel down, but on the other hand, the support protected them from a further decrease in their level of functioning and gradually helped in the recovery process, although they did not recover as quickly as other children who experienced fewer risks from their environment.

d. Going-down Pattern of Adaptation

Figure 6 shows the Going down pattern of adaptation of the three children: Kaka (boy, 11 years), Riswan (boy, 12 years), and Titin (girl, 15 years). We present the children's level of functioning before the tsunami, the loss of loved ones, the traumatic grief reactions and/or decrease in the level of functioning immediately after the tsunami, the point at which they began to recover, and the level of functioning one year after the tsunami.

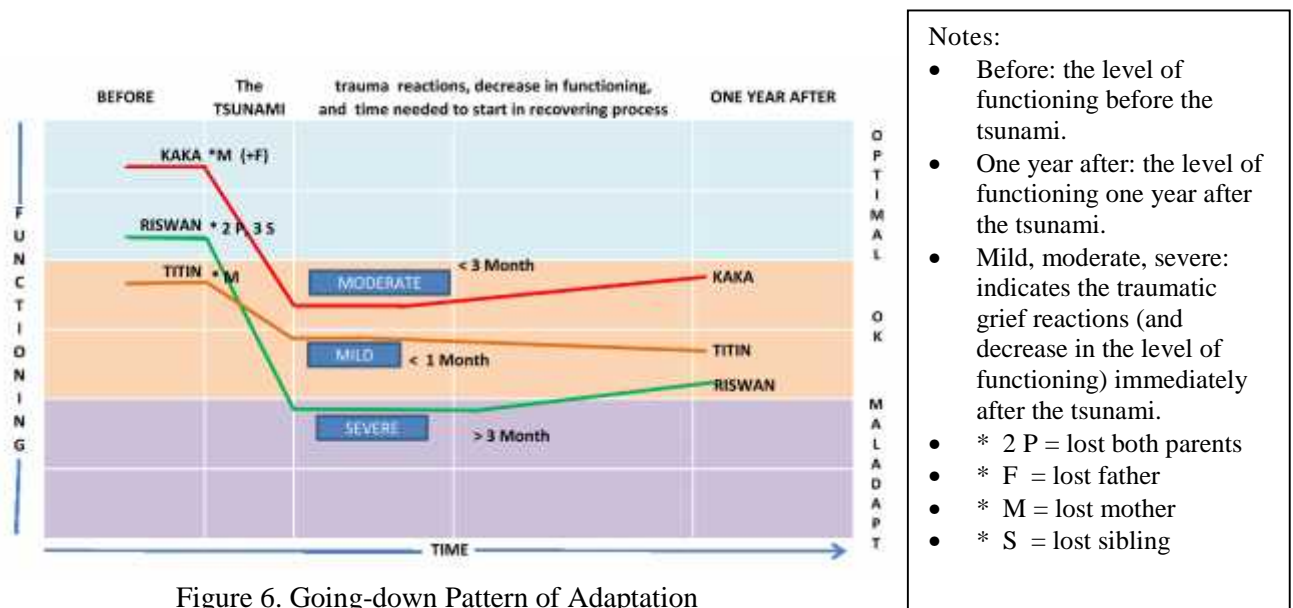


Figure 6. Going-down Pattern of Adaptation

Table 17 shows the changes in the domains of functioning before and one year after the tsunami that led us to categorize them as having a Going-down pattern of adaptation.

Table 17. Changes in the domains of functioning before and after the tsunami for children with a Going-down pattern of adaptation

Child	Before the tsunami				One year after the tsunami			
	School	Peers	Family	Functioning score	School	Peers	Family	Functioning score
Kaka	Good	Good	Good	6	Average	Good	Average	4
Riswan	Good	Average	Good	5	Average	Average	Average	3
Titin	Good	Average	Average	4	Good	Average	Problem	3

One year after the tsunami Kaka and Riswan had lower levels of functioning in academic and family domains, while Titin had a lower level of functioning in the family domain and this functioning was problematic.

Using as a basis our description of the proximal characteristics of these children (see Table 18), we found several factors that could explain why Kaka, Riswan, and Titin tended to have a Going-down pattern of adaptation.

Table 18. Proximal characteristics of the children in the Going-down pattern

	Riswan	Kaka	Titin
Individual characteristics before the tsunami			
Sociability	Moderate	High	High
Obedience	High	High	Moderate
Pro-social tendency	Moderate	High	Low
Enthusiasm	High	High	High
Irritability	High	Low	High
Changes in the structure of the family; risk and protective factors from the family			
Number and the loved ones lost	5 (2 parents, 3 siblings)	2 (Father, sister)	1 (Mother)
Caregiver after the tsunami	Aunt, Uncle	Mother, Stepfather	None
Family support	Yes	Yes	No
Family threat	Yes	Yes	Yes
Protective factors from internal and external aspects			
Religious coping	Yes	Yes	Yes
Active participation	Yes	Yes	Yes
Peers' support	Yes	Yes	Yes
Neighbours' support	No	Yes	Yes
Supportive mentor	No	Yes	No
Risks from the community			
Peers' threat	Yes	No	Yes
Neighbours' threat	Yes	No	Yes

Individual Characteristics before the Tsunami

Kaka and Titin were very sociable but Riswan was less so. Regarding the level of obedience, Riswan and Kaka were very obedient while Titin was moderately obedient. The level of pro-social behaviour varied, but they were all very enthusiastic. Riswan and Titin were very irritable but Kaka was not at all irritable.

Changes in the Structure of the Family

The specific characteristics of the children in this category regarding the loss of their loved ones and the changes in the structure of the family that differentiated them from the first three categories were as follows: first, they lost parent(s) with whom they had the closest relationship, and their relationship with the surviving parent or new caregivers was not so close.

Kaka lost his father and youngest sister, who were very close to him. His father had been his idol and he had admired him greatly. After the tsunami, his grandmother, who was also very close to him, had cared for him in another village. Several months after that, he went back to his own village and lived with his mother in barracks. He was not so close to his mother, because she was very strict and always monitored his behaviour in academic and religious activities, and social functioning with friends. She often pushed Kaka to study or pray and do many other things when he was not in a mood

to do so because of his sadness or his uncomfortable situation. However, sometimes Kaka obeyed her because he was basically an obedient boy. The situation became more difficult for Kaka when his mother decided to remarry when he was not ready to accept a stepfather. He never liked his stepfather and he seemed moderately angry with his mother. He felt very uncomfortable and sometimes cried secretly. He missed his father and youngest sister very deeply.

Riswan lost all his immediate family members, and after the tsunami he lived with his uncle and aunt, who had five boys. Before the tsunami, Riswan's parents spoiled him and treated him like a little king; and they tended to give him what he wanted because he was the first boy and very much wanted in the family after his parents had two girls. Conversely, in Riswan's new family, his uncle had five sons who were always treated the same. Therefore, it was moderately difficult for Riswan to adapt to this situation. Riswan was close to his uncle but not to his aunt and his cousins. In the first months they tried to show Riswan care and attention, but later on, when they knew that Riswan was moderately egoistic and easily irritated, they started to show less attention and were sometimes angry with him.

Titin lost her mother, who had been very close to her. She never felt close to her father because before the tsunami he had already been abusive. After the tsunami, he was very depressed and became more abusive. Before the tsunami, her mother was able to protect her children from her husband's abusive behaviour. After she died, the children did not have any protection, even from their neighbours, because for them, even though they knew that Titin and her siblings were often hit by their father, this was a domestic affair.

To conclude, Kaka, Riswan, and Titin experienced significant negative changes in their family situation and parent-child relationships. They experienced significant threat from the family, even though Kaka and Riswan also received family support from their caregiver(s), because the latter showed attention and provided them with guidance and monitored their daily activities. On the whole, the level of threat was greater than the level of protection. Titin experienced the greatest threat and least support from the family.

Protective Factors from Internal and External Aspects

The three children used positive coping strategies: religious coping and active participation in psychosocial activities. Both Kaka and Riswan were involved actively in a traditional dance group for boys and various programs in the community. Titin did not involve herself in psychosocial programs in the community but became active in extracurricular school programs, which she enjoyed. Titin was also not active in the community religious programs but she prayed individually. Kaka and Riswan actively participated in religious programs in the community. They received support from their peers. They had at least one good friend or had many friends with whom they could join in enjoyable activities.

Regarding the support from neighbours and adult mentors, Kaka received support from his neighbours and had a good relationship with an adult mentor, who was his teacher in the traditional dance group. This seems related to the fact that Kaka had many extended family members living close by and he was also perceived as a good boy by his extended family and also by his mentor.

Even though Titin did not have extended family members who lived close by, she received support from her neighbour who lived next to her barrack-room. However, she did not have a mentor because in the activities in which she was involved, there was no mentor available.

Riswan did not have a good relationship with an adult mentor and did not receive support from neighbours, although he had many extended family members and there were mentors available in the psychosocial and religious activities in Tanjong. These bad relationships may be related to his character: he was very irritable and only did things that he liked.

Risk Factors from Peers and Neighbours

Titin and Riswan experienced peers' threat and neighbours' threat, while Kaka did not. Riswan had older friends who often engaged in risky behaviour such as motor cycle racing and smoking, and his involvement with this gang of boys often resulted in negative responses from his neighbours. This was because community members considered such behaviour negatively. Titin received negative treatment especially from her peers in her village, but not in her school. Moreover, her neighbours often gossiped cynically about members of her family, who were abused by her father. Her peers also treated her in a cynical manner.

On the basis of the above descriptions, we may conclude that these three children were all in a going-down or very slow recovery process for several reasons. First, related to the significant loss of their parents and the situation after the tsunami, they all received more threat than support from their parent or new caregiver(s). All children in the going-down pattern experienced the death of a very significant caregiver who was the protector for the children, while the surviving parent or caregiver(s) failed to give the same degree of support or even imposed a further emotional burden or risk on the children.

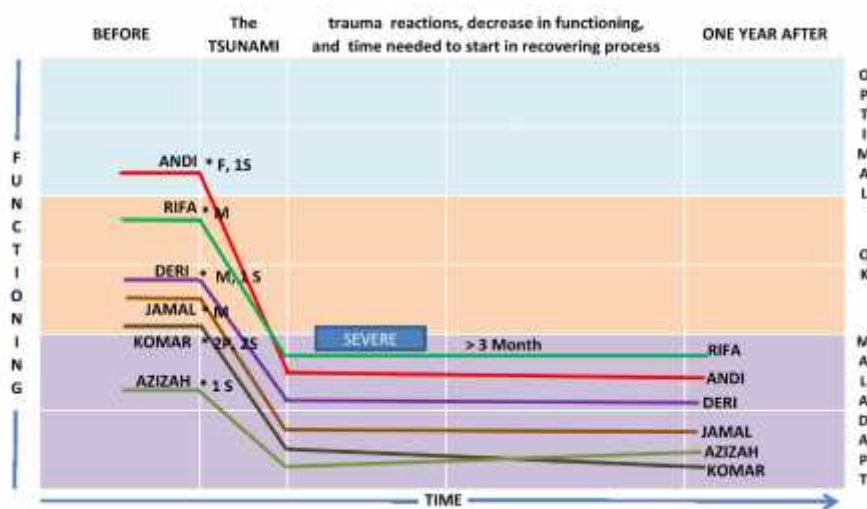
Second, related to the threat from peers and neighbours, Riswan and Titin especially experienced threat from peers and neighbours. The presence of risk from peers and neighbours challenged them and negatively affected their recovery process.

Nonetheless, the available support from peers and the use of religious coping and active participation in psychosocial activities were protective for them. By actively participating in various enjoyable activities they were able to connect positively with their environment. Their religious coping also helped them to protect themselves from further maladaptation. They were all basically very enthusiastic and this positive characteristic might have helped them, especially in the way in which they responded to the various programs from the aid institutions. These protective factors

explain why, despite the many risk factors posed by their family, peers, and neighbours, they ended up in the Going-down category, instead of the Breakdown without Recovery category.

e. Breakdown without Recovery Pattern of Adaptation

Figure 7 shows the Breakdown without Recovery pattern of adaptation of the six children: Rifa (girl, 12 years), Deri (boy, 10 years), Andi (boy, 10 years), Jamal (boy, 11 years), Komar (boy, 13 years), and Azizah (girl, 12 years). We present the children's level of functioning before the tsunami, the loss of loved ones, the traumatic grief reactions and/or decrease in the level of functioning immediately after the tsunami, the point at which they began to recover, and the level of functioning one year after the tsunami.



Notes:

- Before: the level of functioning before the tsunami.
- One year after: the level of functioning one year after the tsunami.
- Mild, moderate, severe: indicates the traumatic grief reactions (and decrease in the level of functioning) immediately after the tsunami.
- * F = lost father
- * M = lost mother
- * S = lost sibling
- * 2 P = lost both parents

Figure 7. Breakdown without Recovery Pattern of Adaptation

Table 19 shows the changes in the domains of functioning before and one year after the tsunami that led us to categorize them as having a breakdown without recovery pattern of adaptation.

Table 19. Changes in the domains of functioning before and after the tsunami for children with a Breakdown without Recovery pattern of adaptation

Child	Before the tsunami				One year after the tsunami			
	School	Peers	Family	Functioning score	School	Peers	Family	Functioning score
Rifa	Average	Good	Average	4	Problem	Average	Average	2
Deri	Average	Average	Average	3	Average	Average	Problem	2
Andi	Average	Good	Good	5	Problem	Average	Problem	1
Jamal	Average	Average	Average	3	Problem	Problem	Problem	0
Komar	Average	Average	Average	3	Problem	Average	Problem	1
Azizah	Average	Problem	Average	2	Average	Problem	Problem	1

One year after the tsunami all of them had at least one domain of functioning that was problematic and none of them was good in any of the three domains. Andi and Jamal had lower levels of functioning in all three domains (academic, peers, and family).

Using as a basis our description of the proximal characteristics of these children (see Table 20), we found several factors that could explain why Rifa, Deri, Andi, Jamal, Komar, and Azizah had a Breakdown without Recovery pattern of adaptation.

Table 20. Proximal characteristics of the children in the Breakdown without Recovery pattern

	Andi	Deri	Rifa	Jamal	Komar	Azizah
Individual characteristics before the tsunami						
Sociability	High	Moderate	High	Moderate	Moderate	Low
Obedience	Moderate	Moderate	Moderate	Moderate	Low	Moderate
Pro-social	High	Moderate	Moderate	Moderate	Moderate	Low
Enthusiasm	High	Low	High	Moderate	Moderate	Low
Irritability	High	High	High	High	High	High
Changes in the structure of the family; risk and protective factors from family after the tsunami						
Number and the loved ones lost	2 (Father, sister)	1 (Mother)	1 (Mother)	4 (Parents, 2 siblings)	1 (Mother)	2 (Sister, nephew)
Caregiver after the tsunami	Mother, uncle	Father, stepmother	Eldest sister	Aunt, uncle	Eldest sister	Both parents
Family support	No	No	No	No	No	No
Family threat	Yes	Yes	Yes	Yes	Yes	Yes
Protective factors from internal and external aspects						
Religious coping	No	No	No	No	No	No
Active participation	No	No	No	No	No	No
Peers' support	No	Yes	No	No	No	No
Neighbours' support	No	No	Yes	No	Yes	No
Supportive mentor	No	No	No	No	No	No
Risks from the community						
Peers' threat	Yes	Yes	Yes	Yes	Yes	Yes
Neighbours' threat	Yes	Yes	Yes	Yes	Yes	Yes

Individual Characteristics before the Tsunami

Before the tsunami, two children were very sociable (Andi and Rifa), three were moderately sociable (Deri, Jamal, and Komar), and one was not sociable (Azizah). Only one (Andi) was very pro-social while four were moderately pro-social and one (Azizah) was not pro-social. The level of enthusiasm varied, and none of them was very obedient. They were all easily irritated.

Changes in the Structure of the Family

The specific characteristics of the children in this pattern regarding the loss of their loved ones and changes in the structure of the family were that they lost parent(s) with whom they had the

closest relationships, and their relationships with the surviving parent or new caregivers were problematic.

Rifa and Komar were siblings and they lost their mother, who was very close to them. Neither of them felt close to their father because, before the tsunami, he had been abusive. After the tsunami, he was very depressed and became more abusive. Before the tsunami, their mother was able to protect her children from her husband's abusive behaviour. After she died, Rifa and Komar still had their eldest sisters but they also felt very overwhelmed by the changes in their lives. Rifa and Komar did not have any protection because they also did not have extended family members as their close neighbours.

Deri lost his mother, who was very close to him. His mother was very attentive and tended to give him what he wanted. After the tsunami, he had been cared for by his father, who was basically caring towards him; however, several months after the tsunami he decided to remarry, but Deri was not ready to accept a stepmother. Deri openly showed his disagreement, but his father did not really take this into account because he thought that Deri was still young and did not know about such things. From that moment, Deri became more troublesome. He was very often angry, rebelled, and always tried to keep his father apart from his stepmother.

Andi lost his father and youngest sister, and after the tsunami he lived with his mother and uncles (younger brothers of his mother). Before the tsunami, Andi was very close to his father. His father was very attentive and spoiled him, tending to give him what he wanted, but Andi's relationship with his mother was only fair. His mother loved his youngest sister more than him. After the tsunami, Andi's mother was very depressed because of the loss of her loved ones, and her relationship with Andi became problematic. They often fought, and Andi's mother sometimes neglected and abused him emotionally.

Jamal lost both parents and so lost his source of protection. He lived with his aunt's family, but unfortunately his aunt was depressed because of losing three daughters. His aunt and uncle were very cold and strict in disciplining him. His uncle was also in a difficult situation because of economic hardship.

To conclude, five children experienced significant negative changes regarding their family situation and caregiver-child relationships. These children lost the most significant person in their lives, and after the tsunami they lived with caregiver(s) with whom they did not have a close relationship, and who even threatened their psychological well-being. One child (Azizah) did not lose caregivers but her parents did not give appropriate guidance or support and were even a risk. All six children in the Breakdown without Recovering pattern experienced significant threat from the family, and did not receive support from their caregiver(s). Their family conditions put them in a very vulnerable situation and negatively affected their level of functioning

Protective Factors from Internal and External Aspects

None of the children in this pattern used religious coping or actively participated in psychosocial programs. Their coping strategies were very weak, and because they were not involved in many activities in the community, five children did not receive peers' support. None of them had a relationship with an adult mentor, but two children (Komar and Rifa) received neighbours' support from the family, which lived next to their barrack-room. This family was greatly concerned because Rifa and Komar lived in very bad conditions.

Risk Factors from Peers and Neighbours

These children's lack of involvement in religious activities and their negative behaviour, as reflected in their rebelliousness and anger towards others, influenced their relationships with their neighbours. Because of their negative behaviour, their neighbours treated them negatively and, in return, the children behaved more negatively towards their neighbours. This spiral of negativity made the neighbours become a risk factor for them. Peers also became a risk factor by isolating them (for Rifa, Komar, Jamal, and Azizah) and by encouraging them to indulge in risky behaviour (for Andi and Deri).

On the basis of the above descriptions, we may conclude that these six children were all in the breakdown category for several reasons. First, five of them experienced significant negative changes in the family with the loss of the most significant person in their lives, whilst the surviving parent or caregiver(s) did not have a close relationship with them and posed significant emotional threat. Second, they experienced considerable threat from peers and neighbours. Third, they did not receive support from mentors and almost none of them received support from peers. Fourth, regarding their personal aspects, none used religious coping or actively participated in psychosocial programs, and they all had internal characteristics (i.e., high irritability) that were considered negative by parents and neighbours. Therefore, they experienced various threats from family, peers, and neighbours, whereas they had few protective factors from external as well as internal aspects. Moreover, they had risk factors from their internal characteristics that made the situation even worse for them.

Between-group Comparison

In the *between-group* comparison, we compared the different pattern-of-adaptation groups with regard to their proximal characteristics. As mentioned previously, we compressed the seven categories into five, because two categories consisted of only one person (Fira in the stress resistance pattern and Azizah in the persistent maladaptive pattern).

We compared the characteristics of each pattern with regard to: (1) the loss of loved ones and traumatic grief reactions immediately after the tsunami, (2) the individual characteristics before the tsunami, (3) the changes in the structure of the family and risk and protective factors in the caregiver-child relationship (family support and family threat), (4) protective factors from internal and external

aspects (religious coping, active participation in psychosocial programs, peers' support, the support from neighbours and from adult mentors), and (5) risk factors from peers and neighbours.

Table 21 presents the characteristics of each pattern with regard to the loss of loved ones, traumatic grief reactions immediately after the tsunami, and the presence of risk and protective factors at the individual and environmental level.

Table 21. Proximal characteristics of each pattern of adaptation

	Positive Transf.	Recovered	Recovering	Going-down	Breakdown
Name and sex	Fira (Fr), girl Hanum (H), girl Disa (D), girl Fati (F), boy Amel (Am), girl	Aning (An), girl Mariana (M), girl Yuli (Y), girl Riska (R), girl Panji (P), girl	Wahyu (W), boy Ilham (I), boy Rini (Rn), boy	Riswan (Rw), boy Kaka (K), boy Titin (T), girl	Rifa (Rf), girl Komar (Ko), boy Deri (De), boy Andi (An), boy Jamal (J), boy Azizah (Az), girl
Loss of loved ones	Fr: F H: 1 S D: 2 P, 2 S F: 2 P, 3 S (all) A: M	An: F M: 1 GM, 3 S Y: 2 S R: F P: M	W: 1 S I: F Rn: M (+F)	Rw: 2 P, 3 S (all) K: F, 1 S T: M	Rf: M Ko: M De: M, 1 S An: F J: 2 P, 2 S Az: 1 S
Traumatic grief reaction immediately	2 Mild, 1 Moderate, 2 Severe (F & A)	1 Severe (M), 4 Moderate	1 Severe (I), 2 Moderate	1 Mild, 1 Moderate, 1 Severe (Rw)	6 Severe
Individual characteristics before the tsunami (protective and risk factors)					
Sociability	4 protective 1 no protective	3 protective 2 no protective	1 protective 2 no protective	2 protective 1 no protective	2 protective 4 no protective
Obedience	2 protective 3 no protective	2 protective 3 no protective	2 protective 1 no protective	2 protective 1 no protective	None protective
Pro-social behaviour	3 protective 2 no protective	3 protective 2 no protective	All protective	1 protective 2 no protective	1 protective 5 no protective
Enthusiasm	3 protective 2 no protective	2 protective 3 no protective	1 protective 2 no protective	All protective	2 protective 4 no protective
Irritability	2 risk 3 no risk	2 risk 3 no risk	1 risk 2 no risk	2 risk 1 no risk	All risk
Changes in the family structure and risk and protective factors in caregiver – child relationship after the tsunami					
Before	Protection Risk	< Protection Risk	> Protection Risk	> Protection Risk	> Protection Risk
After	Protection Risk	> Protection Risk	> Protection Risk	= Protection Risk	< Risk was high without protection
Presence of risk from peers and neighbours					
Peers' threat	2 risk 3 no risk	3 risk 2 no risk	2 risk 1 no risk	2 risk 1 no risk	6 (all) risk
Neighbours' threat	1 risk 4 no risk	5 (all) no risk	1 risk 2 no risk	2 risk 1 no risk	6 (all) risk

	Positive Transf.	Recovered	Recovering	Going-down	Breakdown
Protective factors from internal and external aspects					
Religious	All protective	All protective	All protective	All protective	None protective
Active	All protective	All protective	All protective	All protective	None protective
Peers' support	All protective	All protective	All protective	All protective	1 protective 5 no protective
Neighbours' support	3 protective 2 no protective	2 protective 3 no protective	2 protective 1 no protective	2 protective 1 no protective	2 protective 4 no protective
Mentor	3 protective 2 no protective	4 protective 1 no protective	1 protective 2 no protective	1 protective 2 no protective	None protective

Note: positive transf. = positive transformation; all protective = all had certain protective factor; all risk = all had certain risk factor; 2 no protective = two children did not have certain protective factor; 2 no risk = two children did not have certain risk factor.

Loss of Loved Ones and Traumatic Grief Reactions Immediately after the Tsunami

The number of loved ones lost varied within each pattern. The Positive Transformation, Recovered, and Recovering patterns consisted of children who lost siblings, or father, mother, grandmother, or both parents, or parents and siblings. The Going-down and Breakdown without Recovery patterns consisted of children who lost at least one of their parents, and three children in the Breakdown without Recovery pattern lost their mother. All patterns included at least one child who had had severe traumatic grief reactions immediately after the tsunami, but in the Breakdown without Recovery pattern this was true for all children.

This suggests that, even though all patterns consisted of children who lost the closest family member or caregiver and also consisted of children who had severe traumatic grief reactions immediately after the tsunami, these conditions did not always prevent children from developing well.

Changes in the Structure of the Family

Children in all patterns experienced changes in the structure of their family because all children lost at least one of their family members. However, the changes in the structure led to different patterns of parent/caregiver-child relationship after the tsunami.

Three of five children with a Positive Transformation pattern received less support and experienced significant threat from their parents before the tsunami, but after the tsunami they received more protection than threat from their new caregiver(s). Children with a Recovered pattern received more support than threats from their parent(s) before as well as after the tsunami. Children with a Recovering pattern received more support than threat from their parents before the tsunami, but after the tsunami they received equal degrees of support and threat from their new caregivers or parent.

Children with a Going-down pattern received more support than threat from their parents before the tsunami, but after the tsunami they received considerable threat and reduced support from their parent or new caregiver compared to before the tsunami. Children with a Breakdown without

Recovery pattern experienced more support than risk from their parents before the tsunami. During the tsunami, they lost the most significant person in their lives, and this changed the relationship with their post-tsunami parent or caregivers, because they lived with a parent or new caregivers with whom they did not have a close relationship. Furthermore, the parent or new caregivers even threatened them emotionally. The differences found between the five patterns suggest that the levels of support and threat from parents or caregivers before and after the tsunami were very important factors that may explain why some children adapted positively after the tsunami and others negatively.

Individual Characteristics before the Tsunami

All children with a Breakdown without Recovery pattern were seen as irritable before the tsunami. All children with a Recovering pattern showed pro-social behaviour before the tsunami, and all children with a Going-down pattern were seen as very enthusiastic before the tsunami. No specific pattern was found for the children with a Positive transformation or Recovered pattern regarding their individual characteristics before the tsunami.

These findings suggest that the children with a Recovering and Going-down pattern all had at least one protective factor in their individual characteristics before the tsunami (pro-social behaviour or enthusiasm) that may have helped them to face many adversities after the tsunami and prevented a further decrease in their level of functioning. Children with a Breakdown without Recovery pattern were much more vulnerable in facing the changes in their lives after the tsunami, because before the tsunami they already showed behaviour that was not appreciated by parents and neighbours.

With regard to gender, we found that more girls than boys (eight girls and two boys) had a Positive Transformation or Recovered pattern of adaptation (the two most positive patterns), and more boys (eight boys and four girls) were in the more negative patterns of adaptation (the Recovering, Going-down, and Breakdown without Recovery patterns).

Risk from Peers and Neighbours

All patterns except the Breakdown without Recovery pattern consisted of both children who experienced peers' threat and children who did not, while the children with a Breakdown without Recovery pattern all experienced peers' threat. Almost none of the children (except Amel) with a Positive Transformation or Recovered pattern experienced neighbours' threat, while, almost all children (except Kaka) with a Going-down or a Breakdown without Recovery pattern experienced threat from their neighbours.

These findings suggest that peers' threat seemed to be common for the children because it was present in all patterns. On the other hand, neighbours' threat may have been a considerable risk factor for the children in their recovery process after the tsunami.

Protective Factors from Internal and External Aspects

All children with a Positive transformation or a Recovered, Recovering, or Going-down pattern used religious coping and, almost all of them (except one child) actively participated in the psychosocial programs. None of the children with a Breakdown without Recovery pattern used religious coping or actively participated in the psychosocial programs.

These differences suggest that religious coping and active participation in psychosocial programs were very important protective factors in helping the children to develop positive patterns of adaptation. This was very clear from the differences between the children with a Going-down pattern and those with a Breakdown without Recovery pattern. For the children with a Going-down pattern, even though they experienced threat from their parent or new caregivers, from their peers, and from their neighbours, they were able to maintain their level of functioning and did not fall into the maladaptive zone. They all used religious coping, participated actively in psychosocial programs and all received support from peers. Children with a Breakdown without Recovery pattern also experienced threat from their family, peers, and neighbours but they did not use religious and active coping behaviour, did not participate in psychosocial programs and most did not receive support from peers. These differences may explain why the level of functioning of children with a Breakdown without Recovery pattern one year after the tsunami had fallen into the maladaptive zone and why they developed a negative pattern of adaptation.

All patterns consisted of both children who received support from neighbours and children who did not. Therefore, support from neighbours cannot explain the differences in adaptation one year after the tsunami.

Regarding the support from an adult mentor, three children (Fira, Hanum, and Disa) with a Positive Transformation pattern, whose level of functioning one year after the tsunami was in the optimal zone, had a supportive relationship with an adult mentor. The other two (Fati and Amel) with the same pattern, whose level of functioning was in the ok zone, did not. Four of five children with a Recovered pattern had a supportive relationship with an adult mentor. One child (Rini) with a Recovering pattern, whose level of functioning one year after the tsunami was in the optimal zone, had a supportive relationship with an adult mentor. The other two (Wahyu and Ilham) with the same pattern, whose level of functioning was in the ok zone, did not have a supportive relationship with an adult mentor. Almost none of the children (except Kaka) with a Going-down or Breakdown without Recovery pattern had a supportive relationship with an adult mentor.

Differences found between the five patterns suggest that support from an adult mentor was an important factor in achieving a positive pattern of adaptation.

To conclude, after the tsunami all the children experienced changes in the structure of their family, but the levels of support and threat from parents or caregivers before and after the tsunami were very important factors influencing their pattern of adaptation. Children who experienced more

support than threat from family after the tsunami were able to adapt more positively. On the other hand, children who experienced more threat than support adapted more negatively.

Religious coping, active participation in psychosocial programs, and peers' support were also very important protective factors in helping children to develop positive patterns of adaptation after the tsunami. In addition, support from an adult mentor was also an important factor in helping children to have a positive pattern of adaptation. Support from neighbours was not a strong protective factor especially for children who experienced many threats from family, peers, and neighbours.

Threats from peers were common experiences for the children with a positive or negative pattern of adaptation. Threat from neighbours was a considerable risk factor for the children in their recovery process after the tsunami. With regard to individual characteristics before the tsunami, having at least one good internal characteristic (pro-social or enthusiastic behaviour) was a protective factor, especially for those who had to face many adversities from family, peers, and neighbours after the tsunami. Irritability was a risk factor, especially when family, peers, and neighbours posed potential risk. Gender was also an important factor to be addressed after the tsunami.

5.3 Quantitative Analysis

In order to back up the results of the qualitative data analyses in answering Research Question 7, we carried out quantitative data analyses. We analysed how the patterns of adaptation were related to the risk and protective factors within the children's bio-ecological systems.

As mentioned before, there were seven patterns of adaptation that could best describe the children, but we compressed them into five, because two categories consisted of only one person. The patterns are: Positive Transformation, Recovered, Recovering, Going-down, and Breakdown without Recovery. Each of the five patterns of adaptation was given a score ranging from 1 to 5. Score 1 was given for children belonging to the most negative pattern (Breakdown without Recovery) and score 5 for children belonging to the most positive pattern (Positive Transformation).

First, we analysed the associations between the children's patterns of adaptation and factors within their bio-ecological systems. As mentioned previously, factors within the children's bio-ecological system at the personal level were gender, religious coping, active participation in psychosocial activities, positive characteristics (sociability, obedience, pro-social tendency, enthusiasm), and level of irritability. At the environmental level, the variables were family support, family threat, peers' support, peers' threat, neighbours' support, neighbours' threat, and supportive mentor. We used the Mann-Whitney U test to examine differences between groups (e.g., boys versus girls; children who are supported by a mentor versus children who are not) with regard to the children's patterns of adaptation. Spearman's rho correlations were computed to examine whether there were associations between patterns of adaptation and each of the following variables assessed at interval level: sociability, obedience, pro-social tendency, enthusiasm, and irritability.

Second, we analysed the associations between the children's patterns of adaptation and the cumulative risk and protective factors. We combined all the risk factors from the personal and environmental level (the level of irritability, and threat from family, peers, and neighbours). We also combined all protective factors from the internal and environmental level. Spearman's rho correlations were computed to examine the associations between patterns of adaptation and the cumulative risk factor and the cumulative protective factor.

5.3.1 Patterns of Adaptation and Factors in the Bio-ecological Systems of the Children

Table 21 presents the results of the Mann-Whitney U analyses with regard to the relationships between the patterns of adaptation and the variables at the personal and environmental levels. We reported the sum of ranks (R), the value of U , the effect size (ES), and the level of significance.

Due to the small sample, we determined the level of significance using an *exact significance* (2- tailed). To determine the degree of difference between groups, we calculate effect size manually based on the formula of $r = z / \sqrt{n}$. Z is the absolute value of the z -score and n is the number of observations (Corder & Foreman, 2009).

Table 22. Patterns of Adaptation and bio-ecological aspects of the children

VARIABLES	n	R	U	ES
Personal level				
Gender			32.00 ⁺	.40
Boys	10	87.00		
Girls	12	166.00		
Religious Coping			.00***	.77
No	6	21.00		
Yes	16	232.00		
Active participation in psychosocial activities			13.00**	.61
No	7	41.00		
Yes	15	212.00		
Environmental level : protective factors				
Family support			4.50***	.70
No (Absent)	6	25.50		
Yes (Present)	16	227.50		
Peers' support			2.50***	.68
No (Absent)	5	17.50		
Yes (Present)	17	235.50		
Neighbours' support			52.00	.12
No (Absent)	11	118.00		
Yes (Present)	11	135.00		
Mentor			23.00*	.52
No (Absent)	13	114.00		
Yes (Present)	9	139.00		
Environmental level: risk factors				
Family threat			12.00**	.58

VARIABLES	<i>n</i>	<i>R</i>	<i>U</i>	<i>ES</i>
No (Absent)	6	105.00		
Yes (Present)	16	148.00		
Peers' threat			24.00*	.44
No (Absent)	7	109.00		
Yes (Present)	15	144.00		
Neighbours' threat			13.00**	.68
No (Absent)	12	185.00		
Yes (Present)	10	68.00		

Note: *ES* = Effect Size. Cohen (1988) defined the conventions for effect size as small = .10; medium = .30; and large = .50 (Corder & Foreman, 2009). ⁺ $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

From the table above, it is clear that the children's patterns of adaptation differed significantly according to religious coping and active participation in psychosocial programs. Children who used religious coping had more positive patterns of adaptation than children who did not, with a large effect size ($ES = .77$). Children who actively participated in psychosocial programs also had more positive patterns of adaptation, with a large effect size ($ES = .61$). Gender had a tendency ($p < .08$) to differentiate the children's patterns of adaptation. Girls tended to have more positive patterns of adaptation than boys, and the effect size was medium ($ES = .40$).

Regarding the associations between the patterns of adaptation and variables at the environmental level, the children's pattern of adaptation was significantly related to family support, family threat, peers' support, peers' threat, neighbours' threat, and support from an adult mentor. Except for peers' threat, the effect size of each significant variable was large. Children who received family support had a more positive pattern of adaptation than children who did not, whereas children who experienced family threat had a more negative pattern of adaptation than children who did not. Children who received support from peers had more positive patterns of adaptation than children who did not. On the other hand, children who experienced threat from their peers had a more negative pattern of adaptation than children who did not. Children who had a good relationship with an adult mentor had more positive patterns of adaptation than children who did not. Children who experienced threat from their neighbours had more negative patterns of adaptation than children who did not.

Pattern of adaptation was negatively correlated with level of irritability before the tsunami (Spearman $r = -.44$, $p < .05$). No significant correlations were found between the pattern of adaptation on the one hand, and level of sociability, obedience, pro-social behaviour, and enthusiasm before the tsunami on the other.

Regarding the relationship between the pattern of adaptation and the cumulative risk and the cumulative protective factor, we found that the children's pattern of adaptation was positively correlated with the cumulative protective score (Spearman $r = .67$, $p < .001$) and negatively with the cumulative risk score (Spearman $r = -.74$, $p < .001$).

Chapter 6

Discussion, Conclusions, and Recommendations

6.1 Discussion

As mentioned in Chapters 1 and 2, this study used Bronfenbrenner's bio-ecological theory and the resilience framework to understand factors that lead to resilience or vulnerability in Acehese children one year after the tsunami. Bronfenbrenner's theory emphasizes the *Process – Person – Context – Time* model as the essence of his theory. The resilience framework highlights the importance of risk and protective factors at different levels of children's bio-ecological systems in influencing children's adaptation after a mass disaster. Integrating these two theories and considering the results of the qualitative and quantitative data analyses, we emphasize the following points in our discussion:

6.1.1 Processes

The children's personal experiences and their individual characteristics influenced the way in which they responded to the conditions after the tsunami through reciprocal interactions between the children and their bio-ecological systems. The interrelations among these bio-ecological systems had existed already for a long period of time before the tsunami, and continued after it.

Aspects of the macrosystem such as Islamic beliefs, norms, and values and the kinships system, are manifested in the community and families in the form of daily religious practices and patterns of interaction among neighbours and family. In this sense, these aspects of the macrosystem became aspects of the mesosystems and microsystems as well, and influenced the children's daily lives already long before the tsunami.

The post-tsunami physical and psychosocial conditions in the villages, including the damaged houses and other infrastructures, the water and sanitation in the shelters, the relationships among neighbours, the presence of psychosocial programs for the children in the community, and the relationships among peers were all important factors in the children's daily interaction after the tsunami. The children lived in these altered circumstances, became part of the (more or less) new communities, and were influenced by the dynamic interactions among the members of these communities.

The most intensive interaction was, of course, between the children and their families because the intensity and nature of their relationships were strongest. The changes in the family structure and the relationships among family members were very important in the recovery processes of the children, because being still young, these children were still dependent, especially on their caregivers. Nevertheless, the personal aspects of the children were also very important because these aspects influenced how the children responded to their environment and coped with their adversities. People

in the closest environment of the children also reciprocally responded to the children's behaviour, emotions, and attitudes.

Bronfenbrenner referred to such enduring forms of interaction in the immediate environment that occurred on a fairly regular basis over extended periods of time, as 'proximal processes' (Bronfenbrenner & Morris, 1998, p. 797). Bronfenbrenner underlined the importance of proximal processes in a child's development, including their influence on the way in which a child reacts and copes with adverse conditions. He said that "the form, power, content and direction of the proximal processes effecting development vary systematically as a joint function of the characteristics of the person and the environment, both immediate and more remote" (Bronfenbrenner & Morris, 1998, p. 798). Therefore, it is very important to understand the person and the context at the proximal and more distal levels. If we look at the major findings of this study, we can conclude that each level of the bio-ecological system of the children could provide risk and protective factors that influenced the children's patterns of adaptation after the tsunami. The following sections will specifically discuss each factor and also the cumulative factors in the bio-ecological system.

6.1.2 Person

Gender

We found that the Acehnese girls participating in the study tended to have a more positive pattern of adaptation than the boys. We have several explanations for this difference between boys and girls. First, parents and adults complained more about the behaviour of boys than girls. This is consistent with the report from Rutter (1985), in which he concluded that typical characteristics of boys (e.g. externalizing behaviour) may put them at greater risk than girls (Pianta, Egeland, & Sroufe, 1990; Rutter, 1985). Estes and Tidwell (2002) found that boys showed more externalizing behaviour such as anger and aggressive behaviour while girls tended to have internalizing reactions such as sadness and anxiety after a disaster. As a result, adults were more irritable towards boys.

Another possible explanation for the more positive pattern of adaptation of girls is the fact that girls participated more actively in the informal and formal programs conducted by religious and aid institutions. In the four villages of the study, girls more readily became involved in the psychosocial programs that were held for the children than boys. This tendency is supported by the study of Werner (2005), in which she concluded that girls rely more frequently on informal support sources so that they can recover sooner than boys. This may have resulted in the higher number of support resources available for girls in dealing with adversities as compared to resources for boys. These results suggest that girls received more help and therefore were able to recover earlier than boys.

Either – or perhaps even both – of these explanations for the relatively better adaptation of girls may be true, of course. It is not possible, however, to know which positive influence was most important.

Religious Coping

On the basis of the qualitative and quantitative analyses, we found that the use of religious coping significantly differentiated the children's patterns of adaptation. Children who used religious coping had a more positive pattern of adaptation than children who did not. This finding is consistent with previous studies (Ai, Peterson, & Huang, 2003; Koenig, 2006; Pargament et al., 1998; Smith, Pargament, Brant, & Oliver, 2000) that revealed the role of religious coping in helping the survivors to face and recover from traumatic experiences. Koenig (2006) mentioned that religious coping may help survivors who feel powerless to become stronger because they believe there is a higher Being who helps them and gives them strength to deal with adversities. Religious coping also helps survivors to accept the events and to understand that what has happened is part of God's plan for their lives and that there is hope for a better life.

Specifically in Aceh, as a community with Islamic norms, values, and teaching as a way of life, people believe that God determines the destiny of humans and they need to be *tawakal* (to live in total submission to Allah). The strong process of internalization of Islamic beliefs, norms, and values in the community and family also influences the children's belief in God and their attitudes towards life. When they face problems, they pray or recite the Koran and this makes them feel better. This religious attitude helped them face the adversities after the tsunami.

Trauma survivors of all ages often seek religion and spirituality to give meaning to and make sense of the trauma experienced (Van Wesel, Boeijs, Alisic, & Drost, 2012). Acehnese children with strong religious beliefs clung to the mosque, *meunasah*, Koran, or other religious symbol of their religious identity and prayed to God to deal with their traumas. They engaged in prayer with family and people in the community, and involved themselves in other religious activities to help them reframe the traumatic events in a more positive way and instil hope and optimism in the face of the difficult circumstances. By being connected with their cultural roots and maintaining the habits derived from their macrosystems, together with family, peers, and people in the community, they felt that they were not alone in their suffering. For the children, their involvement in religious activities in the community also provided them with positive appraisal from adults, and this helped them to feel better because they were perceived as good children.

Active Participation in Psychosocial Activities

We found that children who actively participated in psychosocial programs provided by the NGOs in the community had a more positive pattern of adaptation than children who did not. This is consistent with many studies that assessed the role of an active coping style in children's adaptation in

dealing with adversity (Cove, Eiseman, & Popkin, 2005; Masten & Coatsworth, 1998; Masten & Wright, 2009; NCTSN & NCPTSD, 2005; Rutter, 1985). These authors mentioned that active coping behaviour such as participating in social activities is healthier than passive coping behaviour such as withdrawing from other people. By actively participating in such programs, children can access available support that they need, to overcome negative emotions resulting from daily adversities. They can also improve their social skills and other capacities and expand their social network because they meet many friends and adult mentors. In addition, by spending time in structured activities in the community, children have less time to brood on negative thoughts and to become involved in activities that may provide them with negative influences such as violence or gang activities.

The children's active participation in psychosocial activities cannot of course be separated from the presence of the psychosocial programs in the community. It was a reciprocal interaction between the children and the people or social workers who created and managed the programs. The more the children felt that the psychosocial programs were enjoyable and advantageous for them, the greater the likelihood of their responding positively to the programs (Malchiodi, 2008). The intensity and nature of the programs and local people's involvement also mattered. The UNICEF Children's Centre in Terbeh, which was open for the children in the community for 24 hours every day, and the TPA in Tanjong, which was organized by young and local ustadz/ustadzah, are the best examples of psychosocial programs for the children. The fact that most children who were in the Breakdown without Recovery pattern were from Lampineung and Lambaro Skep might be explained by the available psychosocial programs in the community. In these villages, children had fewer opportunities to participate in such programs.

Religious coping and active participation in psychosocial programs were very important protective factors for the children in helping them in their process of adaptation. Religious coping had the biggest effect size ($ES = .77$) and active participation also had a large effect size ($ES = .61$). The children with the most negative pattern of adaptation (the Breakdown without Recovery pattern) used no religious coping and they were neither active in psychosocial programs. That religious coping and participation in psychosocial programs were very important is also clear from the fact that the children in the Going-down and Recovering patterns who experienced family threat and threat from peers or neighbours used religious coping and were active in a program. This may have prevented them from developing a maladaptive pattern of adaptation.

It is interesting to consider why the children in the Breakdown without Recovery pattern did not involve themselves in religious practices or did not participate actively in psychosocial programs. This issue is very important because the Acehnese are known for their very strong religious life and there were more than a hundred psychosocial programs available in Aceh. We will consider this issue after discussing all the major findings of the study regarding risk and protective factors in the children's bio-ecological systems.

Positive Characteristics before the Tsunami

Regarding positive characteristics before the tsunami (e.g., sociability, obedience, pro-social tendency, enthusiasm) both qualitative and quantitative data analyses consistently failed to show significant correlations between these positive characteristics and the children's patterns of adaptation. This might suggest that the impact of the tsunami on the children and their environment was so enormous that even children with strong positive characteristics before the tsunami were not able to protect themselves from negative consequences after the tsunami. It seemed that there were many children who initially had positive characteristics, but who changed significantly in their behaviour, emotions, and daily functioning after the tsunami.

Negative Characteristics before the Tsunami

Unlike the positive characteristics, we found that the children's level of irritability before the tsunami was correlated with their pattern of adaptation after the tsunami. The higher the level of irritability before the tsunami, the more negative their pattern of adaptation. This finding supported Rutter's study (1985), which found that children with a difficult temperament, for example those who were easily irritated, showed more problematic behaviour and less adaptive behaviour than children with a calmer and more easy-going temperament. This may be because children who show a more difficult temperament are more likely to experience or suffer social punishment and receive parental criticism and hostility, which may lead to disharmonious parent-child relationships (Rutter, 1985).

A higher level of irritability before the tsunami may lower a child's capacity to adapt well, especially in collective societies such as Aceh. A child who is easily irritated would suffer a great burden in a community where people are likely to make comments on the behaviour of others. In addition, after the tsunami, the grown-up people tended to be more easily angered or dissatisfied, and were therefore probably even more critical towards children who were (also) touchy.

The substandard conditions for families and communities in almost every aspect were also likely to be especially disadvantageous for such children. Many of their needs probably could not be met because of the limitations of the caregivers or the community. This situation could produce a feeling of frustration and make the children even more irritable.

6.1.3 Context

Microsystems

Family Support and Threat

Specific characteristics of a family can become either risk or protective factors for children in facing adversities. Having a problematic relationship with one's caregiver or having a parent/caregiver who is abusive or distressed, or who neglects the child, are all risk factors for

children, and especially so for children in difficult circumstances. In this study, the children who experienced family threat in one of the above forms had indeed a more negative pattern of adaptation than children who did not experience such threat ($ES = .58$).

This finding can be explained by the fact that very young children are still dependent on their caregivers (Bronfenbrenner & Cicchetti, 1994). In addition, children are also sensitive to the emotions of their parents or other adults around them (Dyb, Jensen, & Nygaard, 2011; Fletcher, 1996; Webb, 2004). Therefore, living with caregivers who were still distressed after the tsunami, might have heightened the children's trauma reactions. Repeated and prolonged observation of parents who showed sadness or were very emotional in responding to the adversities might add to the children's emotional burdens and leave them more overwhelmed and distressed (Dyb, Jensen, & Nygaard, 2011; Hoffman & Kruzcek, 2011). The children needed support to overcome their sadness and unresolved grief, but instead the caregivers added more burdens to them.

The condition usually became worse when parental distress was expressed in the form of abusive behaviour (Masten & Wright, 2009; Riley & Masten, 2005). This situation put the children in a very risky condition because basically they needed a safe and supportive environment to recover and develop fully, but in fact they received more negative treatment. Dyb, Jensen, and Nygaard (2011) reported that the problems arising from parental distress *after* a mass disaster contributed more to the children's later maladaptive behaviour than the adversities they experienced *during* the disaster. In this study, we found that seven out of eight children who experienced parental distress had a maladaptive pattern of adaptation (four with a Breakdown without Recovery pattern, one with a Going-down pattern, and two with a Recovering pattern).

The children could perceive parental abusive behaviour as a rejection, which may have increased their feelings of insecurity (Riley & Masten, 2005; Rutter, 1985). Children's exposure to domestic violence may also lead to behavioural problems (particularly physical aggression and non-compliance), anxiety, depression, concentration difficulties, low self-esteem, and somatic complaints (Anderson & Danis, 2006). In this study, three children who experienced abusive parental behaviour exhibited aggression, and one showed regression.

On the other hand, having a parent/caregiver who is able to communicate and develop a relationship in a warm and caring way, who supports the child's education, and who monitors and guides the children's daily activities were all found to be protective factors for the children. In this study, the children who experienced such family support in one or more of the above forms had a more positive pattern of adaptation than children who did not ($ES = .70$). The above finding is in line with the study of Riley and Masten (2005), which reported that a family that provides a sense of security and confidence would guard children from life threats and is a protective factor for children. A study by Langmeier and Matejcek (1975) found that with subsequent good care by caregivers, most children who survived from a catastrophe disaster appeared to have a good prognosis (see also Loughry & Eber, 2003).

It was not only the level of family support or threat after the tsunami that might have influenced the children's patterns of adaption, but also the changes in the level of family support and threat before and after the tsunami. When a child lost his or her closest person(s) or caregiver(s) and, after the tsunami, stayed with person(s) or caregiver(s) with whom s/he did not have a close relationship, s/he would suffer a greater level of stress than a child who still lived with his or her closest family members after the tsunami. On the other hand, the presence of a supportive adult or caregiver to whom the children could relate closely could significantly mitigate their distress. This suggests the importance of having at least one parent or adult with whom children have a close relationship after a disaster as mentioned by many authors (Grossman et al., 1992; Rutter 1985; Wright & Masten, 2006).

Children who received more support from a parent/caregiver before the tsunami and then received considerable threat and reduced support from their caregiver after the tsunami developed negative patterns of adaptation (the Going-down and the Breakdown without Recovery patterns). Conversely, the children who received more support than threat from their parents after the tsunami had more positive patterns of adaptation (the Positive Transformation and the Recovered patterns).

Peers' Support and Threat

With regard to the role of peers' support, we found that children having peers' support showed a more positive pattern of adaptation than children who did not have it. Children who had at least one good friend to share their problems with and who received support when they had problems, or children who had a peer group of friends with whom they could play in various enjoyable activities, had a more positive pattern of adaptation than children who did not. These findings are consistent with those of similar studies (Arntson & Knudsen, 2004; Rutter, 1985) that revealed evidence that the ability of children to develop and maintain a close and supportive relationship with peers can soften the negative effects caused by traumatic experiences and other adversities in the community. According to Arntson and Knudsen (2004), peers' support is a key protective factor in building resiliency in children and adolescents.

This phenomenon of peers' support cannot be strictly separated from the involvement of the children in religious and psychosocial activities in the community. Opportunities for the children to meet their peers through involvement in various activities in the community may increase their positive feelings because they can play and be happy together with their friends. The availability of a good friend also provides the children with a helping hand when they are sad or have problems. Competent and caring peers also stimulate children to develop their social skills.

Regarding peers' threat, we found a significant difference in the patterns of adaptation between children who experienced peers' threat and those who did not. Children who experienced peers' threat tended to have a more negative pattern of adaptation. Specifically, all children in the Breakdown without Recovery pattern experienced peers' threat. However, there were some children

who experienced peers' threat but had a positive pattern of adaptation (Positive Transformation and Recovered patterns).

Integrating the result of the quantitative and qualitative data analyses, we may say that peers' threat mattered but it is not clear how much. For example, although being called names like *anak yatim*, or orphan, was clearly perceived by the children as hurtful and stigmatizing, these children were likely to have suffered even more from the fact that they were orphans in the first place. However, we should not negate the role of threat from peers because other forms of threat such as frequent activities with delinquent friends, other physical mockery or bullying by peers, or isolation were present especially for the children in the Breakdown without Recovery category. With regard to the involvement of children with delinquent friends, this finding is supported by at least two studies by Masten and Wright (2009) and by Tiet, Huizinga, and Byrnes (2010) in which they mentioned that gangs or groups of delinquent peers may 'hijack' the adaptive system of members of the group, for example by their participation in antisocial behaviour or truancy from school. Such undesirable behaviour may cause problems at school and may damage social relationships with family and non-delinquent peers.

Mesosystems

Neighbours' Support and Threat

Regarding the role of the children's close neighbours, we found that children who had been negatively labelled or stigmatized by their neighbours or were involved in fights with them had a more negative pattern of adaptation than children who did not have such experiences. This result is in line with studies on neighbourhoods that found that violence, stigmatization, and discrimination by the neighbourhood jeopardize a child's development (Maton, 2005; Wright & Masten, 2006; Masten & Wright, 2009).

On the other hand, we found that neighbours' support did not significantly differentiate the children's patterns of adaptation. This might be related to the form and intensity of the neighbours' support that was not strong and solid enough to provide protection. Neighbours' support came from extended family or other people who provided caring, gentle, and warm attention and also guidance in the children's behaviour. Support for the children was also present in the form of material support such as meals and other basic needs. All these forms of support, however, did not appear to protect them from violence, discrimination, or stigmatization, or, in other words, the support from other neighbours was not strong enough to counteract possible neighbour's threat.

Supportive Adult Mentor

The availability of an adult mentor who had a secure relationship with the children seemed to have had a positive effect on them. Children who had secure and supportive relationships with at least one adult mentor (such as a social worker or religious mentor) had a more positive pattern of

adaptation than children who did not have such a relationship. These results affirmed the findings of many studies on the positive role of social activities in communities and highlight the significant importance of having positive relationships with caring or pro-social adults outside the family. Positive and supportive experiences during social activities with adult mentors may have improved children's self-esteem and self efficacy, and may have enhanced their social skills to adapt when dealing with adversities. Moreover, such social activities and supportive relationships may protect children from negative exposure to devastating environments (Cove, Eiseman, & Popkin, 2005; Masten & Wright, 2009; Riley & Masten, 2005; Rutter, 1985).

Exosystems and Macrosystems

The work of various aid institutions at the disaster sites was very helpful because after the tsunami the community was 'paralyzed'. The aid institutions had an important role in helping the community to re-establish things that were important for their daily routines, such as logistics, shelters, water, sanitation, health needs, etc. Aid institutions also played an important a role in providing employment and addressing psychosocial issues. In addressing psychosocial interventions for children, aid institutions, in cooperation with the community, organized social activities that had existed before the tsunami, such as Koran recitation and traditional dance practices. This initiative to re-enforce the local habits or cultures was a very important approach because this might have provided the community, especially the children, with more opportunities or ways of healing after the disaster. After the tsunami, Koran recitation and traditional music and dance practices had strong positive effects on the children's recovery. This can be explained as follows:

Traditional dance and music not only involve music and dance activities, but also relate to Islamic values and teaching. The music and lyrics of the songs express religious values such as hope, joy, passion, grief and sorrow, thereby bringing a sense of calm and peace. Not only the lyrics, but also the movements in the Acehnese traditional dances that are performed together in a group, reflect dynamism, heroism, and discipline. The spirit that is strengthened through traditional dance activities may help people in Aceh to respond to many challenges of life (Melalatoa, 2005). In line with this, a study by Hestyanti and Nurpatria (2008) on the psychosocial impact of traditional dances and music on Acehnese children in conflict areas showed that involvement in traditional dance and music activities seems to have a healing effect on child victims of the prolonged armed conflict. One possible reason is that the movements in the dance may release energy and emotions that cannot be verbally expressed. Traditional dances serve as a medium for the Acehnese to express emotion and it may thus have a comforting effect for them. In addition, because the dances are often performed in groups, relations built with friends during these activities also engender a sense of togetherness and mutual support (Hestyanti & Nurpatria, 2008).

6.1.4 Cumulative Risk Factors and Cumulative Protective Factors

The more risk factors the children encountered, the more negative their pattern of adaptation was. This is in line with many studies on the role of cumulative risks. Experiencing multiple risk factors across multiple domains and levels may hinder children's opportunities to develop well and may lead to an undesirable outcome (Cicchetti, Rogosh, Lynch, & Holt, 1993; Masten & Powell, 2003; Riley & Masten, 2005; Sameroff, Gutman, & Peck, 2003; Wright & Masten, 2006).

The more protective factors children had, the more positive their pattern of adaptation. Having various sources of support from the social environment such as from family, peers, and neighbours may help children to adapt positively to a high level of adversity (Mohr, 2002; Wright & Masten, 2006).

From the qualitative data analysis, we noticed that most children in the Breakdown without Recovery pattern encountered risks from their family, peers, and neighbours, and they also possessed a negative internal characteristic, i.e. irritability. They experienced very limited protection from family, neighbours, peers, and mentors, and their positive characteristics before the tsunami were not strong. None of them used religious coping or actively participated in the psychosocial programs. So, they were confronted with many risk factors.

We also observed that most children in the Going-down pattern encountered risks from their family, peers, and neighbours, and also possessed a negative internal characteristic, i.e. irritability. The protection provided by their family, peers, and neighbours was not strong, but they had at least one positive internal characteristic, i.e. enthusiasm, and all of them used religious coping and actively participated in psychosocial programs in the community.

Two aspects that differentiate between the children in the Going-down pattern and those in the Breakdown without Recovery pattern were their use of religious coping and their active participation in psychosocial programs. As mentioned previously, it is very important to consider why the children in the Breakdown without Recovery pattern did not involve themselves in religious practices or did not participate actively in psychosocial programs.

There are several possible explanations. Using the Bronfenbrenner's bio-ecological theory and the Resilience framework, we assume that there was not only one factor involved, but rather an accumulation of inter-connected factors across levels in the bio-ecological systems.

First, at the personal level, there were the children's unresolved traumatic grief reactions that had not been addressed in an appropriate way by adults in the family or by the programs in the community. According to Zubenko (2002), untreated trauma reactions will add to the negative experiences of children and make them feel confused, frightened, sad, neglected, or angry. It is likely that the children in the Breakdown without Recovery pattern were still angry or unsatisfied with their conditions after the tsunami. Moreover, they had a potential risk factor in their internal characteristics, i.e. irritability, which might have heightened their degree of anger and dissatisfaction with their lives.

Second, from the microsystem, it appeared that their caregivers did not regularly and intensively assist and monitor the religious activities of their children. This is understandable because four of six of them had a caregiver who was in depressed condition. They may have reminded the children to pray, but when the children rebelled or refused to do that, they apparently gave in. The other two children had parents who were very permissive and did not control the children's behaviour appropriately. In addition, none of these families regularly prayed together and some parents had ceased to pray at all. Therefore, the children did not have a model for religious coping.

Third, from the mesosystem, close neighbours might try to help the parents by reminding the children to pray or to go to Koran recitations in the community. However, as they did not know how to approach such children in an appropriately gentle and caring way, but rather demanded that they obey their orders to participate, these children tended to disobey them.

When this situation persisted for a long period, children who did not become actively involved in the religious activities in the community or who did not pray and recite Koran at home tended to receive negative treatment from the family and the village members because they were considered as behaving badly. Such conditions caused the children withdraw even more from religious activities. Therefore they became increasingly more distanced from a supportive source of healing.

Regarding the psychosocial programs in the community, unfortunately, aid institutions gave only very limited support to the psychological treatment, especially concerning trauma healing programs. Our observations suggest that almost all psychosocial programs provided in the four villages failed to address this issue specifically. They lacked expertise in this area. They also did not have programs to reach the children who had withdrawn from their programs or had not participated from the very beginning because they still had psychological problems.

One of the most intensive psychosocial programs for the children was traditional dance and music. Unfortunately, there was a maximum number of children who could join a dance group for each performance. Because the social workers were not sensitive to the impact of this on the children who were excluded, they caused jealousy and distress in the children who were not involved in this program.

The duration and intensity of the psychosocial program is also important. In Lampineung, the psychosocial program took place only once a week. This one session lasted only 1.5 hours, and the approach did not touch children personally (did not develop a supportive relationship between social workers and the children).

6.1.5 Time

One of the factors that needs to be addressed regarding the process of adaptation after a mass disaster is *time*. When we talk about the impact of a mass disaster and children's adaptation afterwards, information about the conditions of the children and their environment before,

immediately, and months or years after the tsunami is crucial. Capturing the situation of the children before, immediately after, and one year after the tsunami was one of the strengths of the study. However, we acknowledge that there is a limitation in that, because before and very soon after the tsunami, the researcher was not in the field. The information about these periods was therefore based only on informants' reports.

6.1.6 Strengths and Limitations of the Study

This study presented a mixed-method approach. Qualitative methods were used to elaborate the breadth and richness of the variables studied and to delve deeply into the phenomenon or the cases investigated. Quantitative methods helped in finding associations between variables in a way that is accepted by the positivist scientific community. The use of mixed method helps people to see and study a phenomenon in an integrated way and from different perspectives. The ethnographic and case-study approaches made a significant contribution to the study, especially in finding relevant aspects to be addressed in the Acehnese context and in minimizing potentially harmful effects of research¹⁵ after a mass disaster. Triangulation is also one of the strengths of this study, because various forms of triangulation were used to strengthen its credibility.

However, this study is not without drawbacks. The small number of participants clearly is a limitation. Our findings may therefore be attributable to chance variation, instead of reflecting universal truths. We feel, however, that the consistency with previous research findings and the internal consistencies that we found in our data do lend credibility to them and trust in their veracity. Future studies that also take into account bio-ecological frameworks will hopefully add to an increasingly detailed understanding of the difficulties children face after a disaster and how to best and most effectively help them. It would, for example, be interesting to see how various factors interact, enabling even more efficient intervention activities.

Our study was also not conducted in an ideal period of time because the research team could not observe the participants immediately after the tsunami. Therefore, much of the information about the children situation and traumatic reactions during the first few months after the tsunami was based on observations and reports of significant others. Consequently, this study may perhaps not fully and adequately represent the initial condition and initial traumatic reactions of the children. This is due to the fact that significant others were not trained to observe more subtle reactions and other subtle internal processes during traumatic reactions. Nevertheless, it is unlikely that this may have had much influence on the data, because of the fact that several informants were involved for every single child, enabling us to compare their observations.

¹⁵ Such as a possibility to experience a secondary trauma due to responding to research questions without any opportunity to receive appropriate psychological debriefing.

6.2 Conclusions and Lessons Learned

After any mass disaster, there are opportunities for children to develop a positive pattern of adaptation, especially due to their specific characteristics, particularly their plasticity, which is quite strong in childhood. Nevertheless, it needs to be recognized that children are also vulnerable, especially because of their dependence on adults around them.

We found that even children with positive patterns of adaptation showed significant symptoms of trauma. Three children who had Positive Transformation or Recovered patterns of adaptation reported that they had sub-clinical symptoms of anxiety or PTS, even though these trauma symptoms did not keep them from functioning well in the academic, social, and family domains. It was not always clear for others though what the mental state of the children was, because the children's symptoms consisted of nightmares and intrusive thoughts. Moreover, the children's behaviour that was easily observable did not always show traumatic reactions. Thus, when a child can already play and laugh with friends, it does not always mean that s/he has recovered from the trauma. However, adults often mistakenly make such assumptions and fail to address this issue.

No singular factor can lead to a positive or negative pattern of adaptation: we found no evidence for a single factor that had such an impact. Rather, processes of adaptation appear to depend on interactions of factors that are present at both personal and external levels. Therefore, it proved to be vitally important to apply Bronfenbrenner's bio-ecological theory of development in the context of this mass disaster, to better understand what helped children after the disaster and what didn't.

The integration of the resilience framework (Masten & Powell, 2003; Wright & Masten, 2006) and the bio-ecological perspective (Bronfenbrenner, 2005) provides an appropriate framework for the understanding of Acehnese children's adaptation one year after the tsunami. The bio-ecological perspective considers the multiple levels a child is confronted with after a disaster. On the basis of this perspective, we were able to identify risks and protective factors at all levels of a child's bio-ecological system.

We noticed that several children possessed many risk factors and had hardly any protective factors. Such children are vulnerable to developmental problems later on. It is important, therefore, that when dealing with children after a mass disaster, we have information regarding the strengths and weaknesses in their internal resources and the negative and positive influences of their family, peers, and neighbourhood. Information about the community, the extended family, and aid institutions is also valuable as they also provide considerable resources for these children.

We learned several important lessons from different levels of the children's bio-ecological systems:

1. The children with severe traumatic grief reactions soon after the tsunami did not always develop a negative pattern of adaptation. On the other hand, the children with mild traumatic grief reactions soon after the tsunami did not always develop a positive pattern of adaptation. There were many

more factors than the level of traumatic grief reactions after the tsunami that might lead to a positive or negative pattern of adaptation. However, it was clear that severe traumatic grief reactions soon after the tsunami needed to be addressed appropriately by adults or organizations in the community.

Caregivers and adults should be aware of children's traumatic reactions and they should know how important it is to encourage children to express their emotions.

2. Religious coping was a significant resource of personal strength for the children who had to deal with adversities after the tsunami. In relation to the children's religious coping, it is also important to note that the roles of parents and religious leaders are also important in this way of coping.
3. Active participation in psychosocial programs was a very important way of coping after the tsunami. In relation to the children's active participation, it is also important to note that this active participation is dependent on the intensity of the programs, the kinds of activities involved, and the opportunity to develop a supportive and steady relationship with social workers.
4. The level of irritability before the tsunami was an internal risk factor for the children and, if combined with parental and neighbours' threat, it became a strong predictor of vulnerability.
5. Certain conditions of parents or caregivers were important sources of protection for the children: (a) parental or caregivers' guidance and monitoring of the children's performance at school, Koran-reading, and prayer activities; and (b) the warmth, close relationship, and emotional support provided by caregivers. Other conditions of parents or caregivers were a source of pressure or became risk factors for the children in the aftermath of the tsunami: when parents/caregivers were depressed, abusive, when their communication with the children was one-way and cold, and when they did not provide emotional support or even forbade the children to express their emotions.

A strong relationship characterized by warmth and guidance with at least one adult or caregiver who is not depressed appeared to be a prerequisite for a better and quicker recovery process.

6. After the disaster, many parents or caregivers seemed to lack the capacity to give optimal support to their children because they themselves also found it difficult to handle their distress. Therefore, to help children recover and prevent them from developing long-term problems, it is also important to address the emotional and physical needs of their caregivers. Programs should consider stabilizing or addressing parents' distress as a priority along with helping the children.

6.3 Recommendations

Learning from the experiences of the children and how all levels of their developmental systems influenced their positive or negative patterns of adaptation, we give the following recommendations in helping child survivors of a mass disaster:

1. Interventions should be ecologically valid: they should encompass children's entire living situations, involving their families, peers, and community, and addressing their personal characteristics,
2. The chief aim of the intervention should be to minimize risk factors and maximize protective factors (Leshner, 2002). However, when risks cannot be easily diminished (e.g., in the case of the enhanced danger of another tsunami), intervention should focus on strengthening children's resilience factors. This may be accomplished by increasing strengths, competencies, and resources of children, and also by strengthening families, peers, neighbours, and community in physical, psychological, and cultural aspects.
3. It is important to bring back a sense of normality as soon as possible. Children need to become involved in routine and in the normal activities they were engaged in during the pre-traumatic period, especially with respect to learning and playing (Malchiodi, 2008). They need to return to educational activities, recreational activities, routine bedtimes, family customs, and community customs as soon as possible. In Indonesia, where religion has an important role in the community, it may be advisable to organize or facilitate religious activities. It may help children to broaden religious coping, increase positive feelings and a sense of togetherness with their community.
4. Addressing children's traumatic reactions
 - a. Children with many risk factors need to be identified as early as possible, especially those who have lost the people closest to them, who live with a depressed or (potentially) abusive caregiver, and who suffered a very traumatic experience. Because these children are prone to developmental and psychological problems. For this reason, aid institutions or local agencies should make an extra effort to identify these children early on, and, because these children tend to avoid social activities, to get them involved in their programs.
 - b. Group activities should be organised because they create a supportive and comforting environment for children. As play and peers are the main sources of healing for children, group activities need to be carried out in a fun way and in enjoyable circumstances. Play may afford stress release and is a priority when working with children after a mass disaster (Malchiodi, 2008; Raynor, 2002).
5. To address the issue of traumatic reactions, there is a huge need to train professionals such as psychologists or other mental health professionals with different cultural backgrounds to master

the required skills in this field. However, when there are not enough psychologists or mental health professionals available, they should train social workers or humanitarian workers so they will become aware of the necessity of listening actively and building up a helping relationship with child survivors, while taking into account their culture.

6. To strengthen the resilience of children, communities (usually with the help of aid institutions) need to provide activities for children that:
 - a. Keep children active and engage them in meaningful activities such as practising traditional dance, handicraft activities, and structured psychosocial activities. This will help them to spend their time in a pleasurable way and keep them from dwelling on their problems.
 - b. Improve children's psychological well-being, for instance by enabling them to use positive coping, practice religion (i.e., pray or recite the Koran together), or by making it possible for each child to build up a relationship with an adult mentor in whom they have confidence.
 - c. Increase support among peers, such as participating in games or fun activities that stimulate cooperation and solidarity, to help improve relationships with friends.
 - d. Appreciate and encourage the enhancement of children's personal strengths instead of responding negatively to children's personal limitations or 'negative behaviour' that seemed to increase following a disaster.
7. In order to improve family relationships and especially parent-child relationships, it is important to have aid programs that do not only involve children, but also their parents. As many parents are prone to be distressed after a mass disaster, the effort should focus on stabilizing their psychological emotions and helping them to function effectively, especially in taking care of their children.

Regular meetings with parents and caregivers are needed in which various activities can be carried out. The content of the meetings can be:

- a. Psycho-education sessions about trauma reactions, how to recognize signs of traumatising in their child and how to respond to it. Teaching sessions for parents to learn better communication skills to use with their children, to help parents improve their relationship with their children and to inform parents about the importance of letting children talk about their emotions in such traumatic circumstances.
- b. Opportunities to share fears or concerns about their children as well as their own sorrow and problems with economics or child rearing. If necessary, a support group may be formed for parents who need it. When parents need individual counselling, it would be best to refer them to mental health professionals. Such an approach may reduce the tendency of distressed parents to abuse or neglect their children.

- c. Livelihood programs for parents who have lost their jobs.
8. Aid institutions need to consider the following important issues in order to optimize their help for children affected by a mass disaster.
 - a. Their work needs to give local people the opportunity to learn the skills so that they can eventually continue the help independently, to assure the continuity of the program.
 - b. Social workers or mentors are needed who are present for a longer period of time and who are given the opportunity to build up personal relationships with the children and their caregiver(s) and other people important for the children. This ensures that a trusted person supports children whose situation is otherwise not stable.
 - c. The termination of the help program should be well prepared and changes of mentors and social workers minimized, to prevent children from having a second traumatic experience by losing a trusted person again. Social workers and mentors involved in short-period programs should refrain from creating a strong emotional bond with children. Involving local volunteers to maintain its sustainability is very important.
 - d. Integrating interventions for various stakeholders in the community such as children, parents, and other members of the community is not an easy task for aid institutions. Moreover, it is commonly found that each organization has its own policy for approaching survivors of a disaster and they usually only work for a certain segment of the community. Because the sustainability of any emergency response depends on the readiness of the local professionals and workers to take over responsibilities after all aid agencies have left the scene, coordination and cooperation among aid institutions, and especially local aid institutions, is necessary to suit the needs of the children and their ecosystems.

References

- Agaibi, C. E., & Wilson, J. P. (2005). Trauma, PTSD, and resilience: a review of the literature. *Trauma, Violence, & Abuse*, 6, 195-216. doi: 10.1177/1524838005277438
- Ai, A. L., Peterson, C., & Huang, B. (2003). The effect of religious-spiritual coping on positive attitudes of adult Muslim refugees from Kosovo and Bosnia. *The International Journal for The Psychology of Religion*, 13(1), 29-47.
- American Academy of Pediatrics, Work Group on Disaster. (1995). *Psychosocial issues for children and family in disasters: A guide for the primary care physician*. Retrieved from <http://www.mentalhealth.org/publications/allpubs/SMA95-3022/default.asp>
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th., text rev.). Washington, DC: Author.
- Anderson, K. M., & Danis, F. S. (2006). Adult daughters of battered women resistance and resilience in the face of danger. *Journal of women and social work. Affilia*, 21, 419-432. doi: 10.1177/0886109906292130
- Arntson, L., & Knudsen, C. (2004). *Psychosocial care and protection of children in emergencies: A field guide*. Save the Children Federation, Inc.
- Aspinall, E. (2006). Violence and identity formation in Aceh under Indonesian rule. In A. Reid (Ed.), *Verandah of violence: The background to the Aceh problem* (pp. 149-176). Singapore: Singapore University Press, NUS Publishing.
- Belter, R. W., & Shannon, M. P. (1993). Impact of natural disaster on children and families. In C. F. Saylor (Ed.), *Issues in clinical child psychology: Children and disasters* (pp. 85-103). New York: Plenum Press.
- Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist*, 59, 20-28. doi: 10.1037/0003-066X.59.1.20 (copyright 2004 by American Psychological Association).
- Briere, J. (1996) *Trauma Symptom Checklist for Children (TSCC) professional manual*. Odessa, FL: Psychological Assessment Resources, Inc.
- Bronfenbrenner, U. (1979). *The ecology of human development: experiments by nature and design*. Cambridge, Massachusetts: Harvard University Press.
- Bronfenbrenner, U. (1994). Ecological models of human development. In *International Encyclopedia of Education, Vol. 3, 2nd Ed.* Oxford: Elsevier. Reprinted in: Gauvain, M. & Cole, M. (Eds), *Readings on the development of children, 2nd Ed.* (1993, pp. 37-43). NY: Freeman.
- Bronfenbrenner, U. (2005). The bioecological theory of human development. In U. Bronfenbrenner (Ed.), *Making human beings human: Bioecological perspectives on human development* (pp. 3-15). Thousand Oaks, CA: Sage (Original work published in 2001).
- Bronfenbrenner, U. (2005). *Making human beings human: Bioecological perspectives on human development*. Thousand Oaks, CA: Sage Publications.
- Bronfenbrenner, U., & Morris, P. A. (1998). The bioecological model of human development. In W. Damon & R. M. Lerner (Eds.), *Handbook of Child Psychology, Vol. 1: Theoretical models of human development* (pp. 793-828). New York: Wiley.
- BRR (Badan Rehabilitasi dan Rekonstruksi) (2005) Aceh dan Nias Setahun setelah Tsunami: Upaya Pemulihan dan Langkah ke Depan (Aceh and Nias one year after the tsunami: efforts towards recovery and the steps forward). Retrieved from http://www.worldbank.org/servlet/WDSContentServer/IW3P/IB/2007/08/28/000020953_20070828135739/Rendered/PDF/355070INDONEI1Tsunami1Bhs01PUBLIC1.pdf

- Cahyono, H. (2008). Dampak konflik pada kehidupan pedesaan di Aceh (The impact of conflict in the life of rural people in Aceh). In I. N. Bhakti (Ed), *Beranda perdamaian: Aceh tiga tahun pasca MoU Helsinki* (pp. 327-369). Yogyakarta: Pustaka Pelajar, Yogyakarta & P2P-LIPI, Jakarta.
- Carlson, E., & Dalenberg, C. (2000). A conceptual framework for the impact of traumatic experiences. *Trauma, Violence, and Abuse*, 1, 4-28.
- Catani, C., Jacob, N., Schauer, E., Kohila, M., & Neuner, F. (2008). Family violence, war, and natural disasters: A study of the effect of extreme stress on children's mental health in Sri Lanka. *BMC Psychiatry*, 8, 33-42.
- Cicchetti, D., Rogosh, F. A., Lynch, M., & Holt, K. D. (1993). Resilience in maltreated children: Process leading to adaptive outcome. *Development and psychopathology*, 5, 629-647.
- Cohen, J. A., Mannarino, A. P., & Deblinger, E. (2006). *Treating trauma and traumatic grief in children and adolescents*. New York: The Guilford Press.
- Collins, N. A. (2005, February 24). *Child victims of Asia's devastating tsunami cope with trauma*. Retrieved from <http://www1.voanews.com/english/news/a-13-2005-02-24-voa64.html>
- Compass, B. E., & Epping, J. E. (1993). Stress and coping in children and families: Implications for children coping with disaster. In C. F. Saylor (Ed.), *Issues in clinical child psychology: Children and disasters* (pp. 11-27). New York : Plenum Press.
- Consuelo, B. H. (2005, April, 25-27). *Age-related reactions of children to disaster and helpful hints to enable coping*. Presented at the Tsunami Trauma Training Conference, Faculty of Psychology Tarumanegara University, Jakarta, Indonesia.
- Corder, G. W., & Foreman, D. I. (2009). *Nonparametric statistics for non-statisticians, a step by step approach*. New Jersey: John Wiley & Sons, Inc.
- Cove, E., Eiseman, M., & Popkin, S. J. (2005). *Resilient children: Literature review and evidence from the HOPE VI panel study*. A final report submitted to the Ford Foundation community and resource development. Washington DC.
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.). Thousand Oaks, CA: Sage.
- Creswell, J. W. (2007). Five qualitative approaches to inquiry. In J. W. Creswell, *Qualitative inquiry and research design: Choosing among five approaches* (pp. 53-84). Thousand Oaks, CA: Sage Publication, Inc.
- Cubis, J. (n.d.). A brief review of resilience to traumatic events in children and adolescents. Australian child & adolescent trauma loss & grief network. Canberra: Australian National University Medical School. Retrieved from <http://earlytraumagrief.anu.edu.au>
- Cummings, E. M., Davies, P. T., & Campbell, S. B. (2000). Complex patterns of influence: Risk and protective factors. In E. M. Cummings, P. T. Davies, & S. B. Campbell, *Developmental psychopathology and family process: Theory, research, and clinical implications* (pp. 124-151). New York: The Guilford Press.
- Denzin, N. K. (1978). *The research act: A theoretical introduction to sociological methods*. New York: McGraw-Hill.
- Djamal, J. M. (22/02/2007). *Refleksi Islam di Aceh: Dulu, kini, dan nanti* (Reflections on Islam in Aceh: The past, now, and the future). Opinion in Serambi Indonesia on-line news. Retrieved from: <http://www.serambinews.com/old/index.php?aksi=bacaopini&opinid=883>
- Dodor, B. A., Sira, N., & Hausafus, C. O. (2010). Breaking down on the walls of teacher isolation. *Journal of Family & Consumer Sciences Education*, 28(1). Retrieved from <http://www.natefacs.org/JFCSE/v28no1/v28no1Dodor.pdf>

- Drake, E. B., Bush, S. F., & van Gorp, W. G. (2001). Evaluation and assessment of PTSD in children and adolescents. In S. Eth (Ed.), *PTSD in children and adolescents* (pp. 1-31). Washington, DC: American Psychiatric Association.
- Dyb, G., Jensen, T. K., & Nygaard, E. (2011). Children's and parents' posttraumatic stress reactions after the 2004 tsunami. *Clinical Child Psychology and Psychiatry*, 16(4), 621-634. doi:10.1177/1359104510391048
- Egeland, B., Carlson, E. A., & Sroufe, L. A. (1993). Resilience as process. *Development and Psychopathology*, 5, 517-528.
- Erlindawati. (2007). Perubahan kebudayaan dan pendangkalan akidah melalui teknologi (Cultural changes and creed shallowing through technology). In S. Tripa, D. Kemalawati, & M. Sahlan (Eds.), *Masa depan remaja Islam* (pp. 37-49). Lapena: Institute for Culture and Society.
- Esser, J. A. (2002). Posttraumatic stress disorder and reaction. In W. N. Zubenko & J. Capozzoli (Eds.), *Children and disaster: A practical guide to healing and recovery* (pp. 101-123). New York: Oxford University Press.
- Estes, L., & Tidwell, R. (2002). Sexually abused children's behaviours: impact of gender and mother's experience of intra- and extra-familial sexual abuse. *Family Practice*, 19, 36-44.
- EU Council Secretariat (15/12/2006). *EU monitoring mission in Aceh* (Indonesia) (September 2005 - December 2006). Retrieved from http://www.consilium.europa.eu/uedocs/cmsUpload/061215_ACEHfactsheet_061215.pdf
- Felner, R. D. (2006). Poverty in childhood and adolescence: A transactional-ecological approach to understanding and enhancing resilience in contexts of disadvantage and developmental risk. In S. Goldstein & R. B. Brooks (Eds.), *Handbook of resilience in children* (pp. 125-148). New York: Springer Science.
- Fletcher, K. E. (1996). Childhood posttraumatic stress disorder. In E. J. Mash & R. A. Barkley (Eds.), *Child psychopathology* (pp. 242-276). New York: Guilford Press.
- Flores, E., Cicchetti, D., & Rogosch, F. A. (2005). Predictors of resilience in maltreated and nonmaltreated Latino children. *Developmental Psychology*, 41, 338-351.
- Garmezy, N. (1983). Stressors of childhood. In N. Garmezy & M. Rutter (Eds.), *Stress, coping, and development in children*. Baltimore: The Johns Hopkins University Press.
- Garmezy, N., Masten, A. M., & Tellegen, A. (1984). The study of stress and competence in children: A building block for developmental psychopathology. *Child Development*, 55, 97-111.
- Goenjian, A. K., Pynoos, R. S., Steinberg, A. M., Najarian, L. M., Asarnow, J. R., Karayan, I., Ghurabi, M., & Fairbanks, L. A. (1995). Psychiatric comorbidity in children after the 1988 earthquake in Armenia. *Journal of American Academic Child Adolescent and Psychiatry*, 34(9), 1174-1184.
- Goldstein, S., & Brooks, R. B. (2006). Why study resilience? In S. Goldstein & R. B. Brooks (Eds.), *Handbook of resilience in children* (pp. 3-15). New York: Springer Science.
- Groome, D., & Soureti, A. (2004) Post-traumatic stress disorder and anxiety symptoms in children exposed to the 1999 Greek earthquake. *British Journal of Psychology*, 95, 387-397.
- Grossman, F. K., Beinashowitz, J., Anderson, L., Sakurai, M., Finnin, L., & Flaherty, M. (1992). Risk and resilience in young adolescents. *Journal of Youth and Adolescence*, 21(5), 529-550.
- Hadi, A. (2010). *Aceh sejarah, budaya, dan tradisi* (Aceh history, culture, and tradition). Jakarta: Yayasan Pustaka Obor Indonesia.
- Hartini, N. (2010). Bencana tsunami dan stress paska trauma pada anak. (Tsunami disaster and post-traumatic stress on children). *Jurnal masyarakat kebudayaan dan politik* (Journal of culture and politics society), 22(3), 259-264.

- Hestyanti, Y. R. (2006). Children survivors of the 2004 Tsunami in Aceh, Indonesia: A study of resiliency. In B. M. Lester, A. Masten, & B. McEwen (Eds.), *Resilience in children. Annals of The New York Academy of Science*, 1094, 303-307.
- Hestyanti, Y. R., & Nurpatra, N. I. (April 2008). *Mid-term evaluation of TALOE's project in Aceh named: Traditional Acehese art teaching as an alternative approach of trauma recovery and development of children's art creativity*. Unpublished manuscript. Internal report to Caritas Czech Republic.
- Hoffman, M. A., & Kruczek, T. (2011). A bioecological model of mass trauma: individual, community, and societal effects. *The Counseling Psychologist*, 20,1-41. doi: 10.1177/0011000010397932
- Irwanto (2005). Bantuan kemanusiaan, tsunami kedua (humanitarian aid, the second tsunami). In P. Cahanar (Ed.), *Bencana Gempa dan Tsunami* (Earthquake and tsunami disaster) (pp. 468-471). Jakarta: Penerbit buku Kompas.
- Irwanto, & Nurpatra, N. I. (2007). *The re-integration of Acehese children survivors of armed conflict: A rapid assessment*. Unpublished manuscript. Internal report to International Labour Organization (ILO) and United Nations Children's Fund (UNICEF).
- Jagodic, G. K., & Kontac, K. (2002). Normalization: a key to children's recovery. In W. N. Zubenko & J. Capozzoli (Eds.), *Children and disaster: A practical guide to healing and recovery* (pp. 159-171). New York: Oxford University Press.
- Jannah, R. (2007). Demi masa (for the time). In S. Tripa, D. Kemalawati, & M. Sahlan (Eds.), *Masa depan remaja Islam* (pp. 99-106). Lapena: Institute for Culture and Society.
- Kawilarang, H. (2008). *Aceh dari Sultan Iskandar Muda ke Helsinki* (Aceh, from the Sultan Iskandar Muda to Helsinki). Banda Aceh: Bandar Publishing.
- Kirk, J., & Miller, M. L. (1986). *Reliability and Validity in Qualitative Research*. London: Sage Publication, Ltd.
- Koenig, H. (2006). *In the wake of disaster: religious response to terrorism and catastrophe*. Pennsylvania: Templeton Foundation Press.
- Koverola, C. (1995). Posttraumatic stress disorder. In R. T. Ammerman & M. Hersen (Eds.), *Handbook of child behavior therapy in the psychiatric setting* (pp. 389-408). Canada: John Wiley & Sons, Inc.
- Lerner, R. M. (2005). Foreword. Urie Bronfenbrenner: career contributions of the consummate developmental scientist. In U. Bronfenbrenner (Ed.), *Making human beings human: Bioecological perspectives on human development* (pp. ix-xxvi). Thousand Oaks, CA: Sage.
- Leshner, A. I. (2002). Introduction. In M. D. Glantz & J. L. Johnson (Eds.), *Resilience and development: Positive life adaptations* (pp. 1-3). New York: Kluwer Academic Publishers.
- Levine, P., & Kline, M. (2007). *Trauma through a child's eyes: Awakening the ordinary miracle of healing*. Berkeley, CA: North Atlantic Books & Lyons.
- Loughry, M., & Eyber, C. (Eds.) (2003). *Psychosocial concepts in humanitarian work with children: A review of the concepts and related literature*. Roundtable on the Demography of Forced Migration, National Research Council, Program on Forced Migration and Health at the Mailman School of Public Health, Columbia University. Retrieved from <http://www.nap.edu/catalog/10698.html>
- Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*, 71, 543-562.
- Luthar, S. S., & Zelazo, L. B. (2003). Research on resilience: An integrative review. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 510-549). New York: Cambridge University Press.

- Malchiodi, C. A. (2008). Creative intervention and childhood trauma. In C. A. Malchiodi (Ed.), *Creative interventions with traumatized children* (pp. 3-21). New York: Guilford Publications.
- Maslan, M. R. (21/04/2005). *TNI keukeuh tolak gencatan senjata dengan GAM* (The Indonesian Army insisted to reject cease-fire with the GAM). Retrieved from <http://news.detik.com/read/2005/04/21/174953/346966/10/tni-keukeuh-tolak-gencatan-senjata-dengan-gam>
- Masten, A. S. (2001). Ordinary magic: resilience processes in development. *American Psychologist*, 56 (3), 227-238. doi: 10.1037//0003-066X.56.3.227
- Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments. *American Psychologist*, 53, 205-220.
- Masten, A. S., & Powell, J. L. (2003). A resilience framework for research, policy, and practice. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 1-25). New York: Cambridge University Press.
- Masten, A. S., & Obradovic, J. (2006). Competence and resilience in development. In B. M. Lester, A. Masten, & B. McEwen (Eds.), *Resilience in children. Annals of the New York Academy of Science*, 1094, 13-27.
- Masten, A. S., & Obradovic, J. (2008). Disaster preparation and recovery: lessons from research on resilience in human development. *Ecology and Society* 13(1): 9. Online URL: <http://www.ecologyandsociety.org/vol13/iss1/art9/>
- Masten, A. S., & Osofsky, J. D. (2010). Disaster and their impact on child development: introduction to the special Section. *Journal Compilation, Society for Research in Child Development*, 81 (4), 1029-1039.
- Masten, A. S., & Wright, M. O. (2009). Resilience over the lifespan. In J. W. Reich (Ed.), *Handbook of adult resilience* (pp. 213-237). New York: Guilford Publications.
- Maton, K. I. (2005). The social transformation of environments and the promotion of resilience in children. In R. D. V. Peters, B. Leadbeater, & R. J. McMahon (Eds.), *Resilience in children, families, communities: Linking context to practice and policy* (pp. 119-135). New York: Kluwer Academic/Plenum.
- Melalatoa, M. J. (2005). Memahami Aceh sebuah perspektif budaya (Understanding Aceh: A cultural perspective). In S. W. Kusumo, *Aceh kembali ke masa depan* (pp. 1-80). Jakarta: IKJ Press.
- Miller, M., A. (2006). What's special about special autonomy in Aceh? In A. Reid (Ed), *Verandah of violence: the background to the Aceh problem* (pp. 292-314). Singapore: Singapore University Press, NUS Publishing.
- Mohr, W. K. (2002). Understanding children in crisis: The developmental ecological framework. In W. N. Zubenko & J. Capozzoli (Eds.), *Children and disaster: A practical guide to healing and recovery* (pp. 72-84). New York: Oxford University Press.
- National Child Traumatic Stress Network and National Center for PTSD. (2005). *Psychological First Aid: Field Operations Guide*. September, 2005.
- Neria, Y., Nandi, A., & Galea, S. (2008). Post-traumatic stress disorder following disasters: a systematic review. *Psychological Medicine*, 38, 467-480. doi: 10.1017/S0033291707001353
- Neuner, F., Schauer, E., Catani, C., Ruf, M., & Elbert, T. (2006). Post-tsunami stress: a study of posttraumatic stress disorder in children living in three severely affected regions in Sri Lanka. *Journal of Traumatic Stress*, 19, 339-347. PMID: 16789000
- Office of the United Nations High Commissioner for Human Rights. (September 1990). *Convention on the Rights of the Child*. Retrieved from <http://www2.ohchr.org/english/law/crc.htm>

- Owens, E. B., & Shaw, D. S. (2003). Poverty and early childhood adjustment. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 267-292). New York: Cambridge University Press.
- Pargament, K. I., Smith, B. W., Koenig, H. G., & Perez, L. (1998). Patterns of positive and negative religious coping with major life stressors. *Journal of the Scientific Study of Religion*, 37, 710-724.
- Patton, M. C. (1990). *Qualitative evaluation and research methods* (2nd ed.). Newbury Park: Sage Publications.
- Pianta, R. C., Egeland, B., & Sroufe, A. (1990). Maternal stress and children's development: Prediction of school outcomes and identification of protective factors. In J. Rolf, A. S. Masten, D. Cicchetti, K. H. Nuechterlein, & S. Weintraub (Eds.), *Risk and protective factors in the development of psychopathology* (pp. 215-235). New York: Cambridge University Press.
- Piyasil, V., Ketuman, P., Plubrukarn, R., Jotipanut, V., Tanprasert, S., Aowjinda, S., & Thaeeromanophap, S. (2007). Post traumatic stress disorder in children after the tsunami disaster in Thailand: 2 years follow-up. *Journal of Medical Association Thailand*, 90(11), 2370-2376.
- Poerwandari, E. K. (1998). *Pendekatan kualitatif dalam penelitian psikologi* (Qualitative approach in psychological research). Jakarta: Lembaga Pengembangan Sarana Pengukuran dan Pendidikan Psikologi UI.
- Pynoos, R. S., & Nader, K. (1989). Children's memory and proximity to violence. *Journal of American Academy of Child and Adolescent Psychiatry*, 28(2), 236-241.
- Radke-Yarrow, M. & Sherman, T. (1990). Hard growing: Children who survive. In J. Rolf, A. S. Masten, D. Cicchetti, K. H. Nuechterlein, & S. Weintraub (Eds.), *Risk and protective factors in the development of psychopathology* (pp. 97-119). New York: Cambridge University Press.
- Raynor, C. M. (2002). The role of play in the recovery process. In W. N. Zubenko & J. Capozzoli (Eds.), *Children and disaster: A practical guide to healing and recovery* (pp. 124-134). New York: Oxford University Press.
- Reid, A. (2005). *The contest for North Sumatra Aceh, the Netherlands and Britain 1858-1898* (M. Maris, Trans.). Jakarta: Yayasan Obor Indonesia.
- Reid, A. (2006). Introduction. In A. Reid (Ed.), *Verandah of violence: The background to the Aceh problem* (pp. 1-20). Singapore: Singapore University Press, NUS Publishing.
- Republic of Indonesia, BAPPENAS (National Development Planning Agency). April 2005. *Master plan for the rehabilitation and reconstruction of the regions and communities of the province of Nanggroe Aceh Darussalam and the Islands of Nias, Province of North Sumatra*. Retrieved from http://www.usindo.org/publications/Blue_Plan_Aceh.pdf
- Riley, J. R., & Masten, A. S. (2005). Resilience in context. In R. D. V. Peters, B. Leadbeater, & R. J. McMahon (Eds.), *Resilience in children, families, communities: Linking context to practice and policy* (pp. 13-25). New York: Kluwer Academic/Plenum.
- Rutter, M. (1985). Resilience in the face of adversity, protective factors and resistance to psychiatric disorder. Lecture. *British Journal of Psychiatry*, 147, 598-611.
- Rutter, M. (1990). Psychosocial resilience and protective Mechanism. In J. Rolf, A. S. Masten, D. Cicchetti, K. H. Nuechterlein, & S. Weintraub (Eds.), *Risk and protective factors in the development of psychopathology* (pp. 181-214). New York: Cambridge University Press.
- Rutter, M. (2006). Implications of resilience concepts for scientific understanding. In B. M. Lester, A. Masten, & B. McEwen (Eds.), *Resilience in children. Annals of The New York Academy of Science*, 1094, 1-12.

- Sameroff, A. J., & Seifer, R. (1990). Early contributors to developmental risk. In J. Rolf, A. S. Masten., D. Cicchetti, K. H. Nuechterlein, & S. Weintraub (Eds.), *Risk and protective factors in the development of psychopathology* (pp. 52-66). New York: Cambridge University Press.
- Sameroff, A., Gutman, L. M., & Peck, S. C. (2003). Adaptation among youth facing multiple risks. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 364-391). New York: Cambridge University Press.
- Satriani, S. (2008). Dinamika sejarah gampong dan kampung di Aceh (The history dynamics of the gampong and kampung in Aceh). In I. H. Gayatri (Ed.), *Runtuhnya gampong di Aceh: Studi masyarakat desa yang bergejolak* (pp. 43-120). Yogyakarta: Pustaka Pelajar, Yogyakarta and Pusat Penelitian Politik – LIPI, Jakarta.
- Saylor, C. F. (1993). Introduction: Children and disasters clinical and research issues. In C. F. Saylor (Ed.), *Issues in clinical child psychology: Children and disasters* (pp. 1-9). New York: Plenum Press.
- Schulze, K. E. (2006). Insurgency and counter-insurgency: Strategy and the Aceh Conflict, October 1976 – May 2004. In A. Reid (Ed.), *Verandah of violence: The background to the Aceh problem* (pp. 225-271). Singapore: Singapore University Press, NUS Publishing.
- Seidman, E., & Pedersen, S. (2003). Holistic contextual perspectives on risk, protection, and competence among low-income urban adolescents. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 318-342). New York: Cambridge University Press.
- Shannon, M. P., Lonigan, C. J., Finch, A. J. Jr., & Taylor, C. M. (1994). Children exposed to disaster: I. Epidemiology of post-traumatic symptoms and symptoms profiles. *Journal of American Academy of Child and Adolescent Psychiatry*, 33(1), 80-93.
- Sheridan, S. M., Eagle, J. W., & Dowd, S. E. (2006). Families as contexts for children's adaptation. In S. Goldstein & R. B. Brooks (Eds.), *Handbook of resilience in children* (pp. 165-179). New York: Springer Science.
- Silva, R. R., & Kessler, L. (2004). Resiliency and vulnerability factors in childhood PTSD. In R. R. Silva (Ed.), *Posttraumatic stress disorders in children and adolescents* (pp. 18-37). NY: W.W. Norton & Company.
- Silverman, W. K., & La Greca, A. M. (2002). Children experiencing disasters: Definitions, reactions, and predictors of outcomes. In A. M. La Greca, W. K. Silverman, E. M. Vernberg, & M. C. Roberts (Eds.), *Helping children cope with disasters and terrorism* (pp. 11-33). Washington DC: American Psychological Association.
- Smith, B. W., Pargament, K. I., Brant, C. & Oliver, J. M. (2000). Noah revisited: Religious coping by church members and the impact of the 1993 Midwest flood. *Journal of Community Psychology*, 28, 169-186.
- Sulaiman, M. I. (2006). From Autonomy to periphery: A Critical evaluation of the Acehnese nationalist movement. In A. Reid (Ed.), *Verandah of violence: The background to the Aceh problem* (pp. 121-148). Singapore: Singapore University Press, NUS Publishing.
- Sutanto, L. (2005). Efek trauma gempa dan tsunami (the traumatic effects of an earthquake and the tsunami). In P. Cahanar (Ed.), *Bencana Gempa dan Tsunami* (Earthquake and tsunami disaster) (pp. 375-378). Jakarta: Penerbit buku Kompas.
- Suyanto, B. (2005). Nasib anak-anak korban bencana (The fate of child victims of a disaster). In P. Cahanar (Ed.), *Bencana Gempa dan Tsunami* (Earthquake and tsunami disaster) (pp.447-450). Jakarta: Penerbit buku Kompas.
- Swick, K. J., & Williams, R. D. (2006). An analysis of Bronfenbrenner's bio-ecological perspective for early childhood educators: implications for working with families experiencing stress. *Early Childhood Education Journal*, 33(5), 371-378. doi: 10.1007/s10643-006-0078-y

- Syahrizal, & Djuned, S. (2004) *Apresiasi seni budaya Aceh*. (Appreciation of art and culture of Aceh). Banda Aceh: Ar-Raniry Press.
- Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: Combining qualitative and quantitative approaches*. Thousand Oaks, CA: Sage.
- Thastum, M., Johansen, M. B., Gubba, L., Olesen, L. B., & Romer, G. (2008). Coping, social relations, and communication: A qualitative exploratory study of children of parents with cancer. *Clinical Child Psychology and Psychiatry*, 13, 123–138.
- Thienkrua, W., Cardozo, B. L., Chakkraband, M. L. S., Guadamuz, T. E., Pengjuntr, W., Tantipiwatanaskul, P., et al. (2006). Symptoms of posttraumatic stress disorder and depression among children in tsunami- affected areas in southern Thailand. *Journal of the American Medical Association*, 296(5), 549-559.
- Thufail, F. (2005). Kekerasan, bencana, dan trauma (violence, disaster, and trauma). In P. Cahanar (Ed.), *Bencana Gempa dan Tsunami* (Earthquake and tsunami disaster). Jakarta: Penerbit buku Kompas.
- Tiet, Q. Q., Huizinga, D., & Byrness, H. F. (2010). Predictors of resilience among innercity youths. *Journal of Child Family Study*, 19, 360-378.
- Tjhin, W., Guerrero, A. P. S., Kaligis, F., & Khamelia, M. (2010). Psychiatric morbidity among children in North Aceh district (Indonesia) exposed to the 26 December 2004 tsunami. *Asia-Pacific Psychiatry*, 2, 151-155.
- Tudge, J. R. H., Mokrova, I., Hatfield, B. E., & Karnik, R. B. (2009). Uses and misuses of Bronfenbrenner's bioecological theory of human development. *Journal of Family Theory & Review*, 1, 198-210.
- Tudge, J. R. H., Odero, D. A., Hogan, D. M., & Etz, K. E. (2003). Relations between the everyday activities of preschoolers and their teachers' perceptions of their competence in the first years of school. *Early Childhood Research Quarterly*, 18, 42-64.
- Van Wesel, F., Boeije, H. R., Alisic, E., & Drost, S. (2012). I'll be working my way back: A qualitative synthesis on the trauma experience of children. *Psychological Trauma: Theory, Research, Practice, and Policy*, 4, 516-526.
- Vijayakumar, L., Kannan, G. K., & Daniel, S. J. (2006). Mental health status in children exposed to tsunami. *International Review of Psychiatry*, 18(6), 507–513.
- Waspo, A., Miharja, A., Fadhil, E., Indriyo, I. W., Surono, J. I., & Ruwaida. (2007). *Menggenapi harapan rakyat: Masalah dan tantangan pemberdayaan masyarakat Aceh paska tsunami*. (Fulfilling people's expectation: Issues and challenges on the empowerment of Acehnese community after the tsunami). Jakarta: Puska Bina Swadaya.
- Webb, N. B. (2004). A developmental-transactional framework for assessment of children and families following a mass trauma. In N. B. Webb (Ed.), *Mass trauma and violence: Helping families and children cope* (pp. 23-49). New York: The Guilford Press.
- Webb, N. B. (2004). The impact of traumatic stress and loss on children and families. In N. B. Webb. (Ed.), *Mass trauma and Violence: Helping families and children cope* (pp. 3-22). New York : The Guilford Press.
- Werner, E. E. (2005). Resilience research: Past, present, and future. In R. D. V. Peters, B. Leadbeater, & R. J. McMahon (Eds.), *Resilience in children, families, communities: Linking context to practice and policy* (pp. 3-11). New York: Kluwer Academic/Plenum.
- Wickrama, K. A. S., & Kaspar, V. (2007). Family context of mental health risk in tsunami-exposed adolescents: Findings from a pilot study in Sri Lanka. *Social Science and Medicine*, 64(3), 713–723.

- Wright, M. O., & Masten, A. S. (2006). Resilience processes in development fostering positive adaptation in the context of adversity. In S. Goldstein & R. B. Brooks (Eds.), *Handbook of resilience in children* (pp. 17-37). New York: Springer Science.
- Wright, M. O., Masten, A. S., Northwood, A., & Hubbard, J. J. (1997). Long-term effects of massive trauma: Developmental and psychobiological perspectives. In D. Cicchetti & S. L. Toth (Eds.), *Rochester Symposium on Developmental Psychopathology* (pp. 181-225). New York: University of Rochester Press.
- Yates, T. M., Egeland, B., & Sroufe, L. A. (2003). Rethinking resilience: A developmental process perspective. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 243-266). New York: Cambridge University Press.
- Zubenko, W. N. (2002). Developmental issues in stress and crisis. In W. N. Zubenko & J. Capozzoli (Eds.), *Children and disaster: A practical guide to healing and recovery* (pp. 85-100). New York: Oxford University Press.
- Zucker, R. A., Wong, M. M., Puttler, L. I., & Fitzgerald, H. E. (2003). Resilience and vulnerability among sons of alcoholics: Relationship to developmental outcomes between early childhood and adolescence. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 76-103). New York: Cambridge University Press.

Appendices

Appendix 1 Semi-structured Interview Guide

Guide for Semi-structured Interviews with Informants

Topics	Interview guide / questions
Introduction / rappports	<ol style="list-style-type: none"> 1. How are you? 2. How is the daily situation in the camp (e.g., how is your relationship with your new neighbours, how is the water and sanitation)?
Information about the current situation	<ol style="list-style-type: none"> 3. What is your opinion about the situation in the camp? Is it comfortable enough or not? What causes the situation to be comfortable and what makes the situation uncomfortable?
The tsunami event and its aftermath	<ol style="list-style-type: none"> 4. The chronology of tsunami events for the child (may also include stories of what happened to other family members): <ol style="list-style-type: none"> a. What happened to the child during the tsunami? Was he/she swept under water, did any injuries occur, what were other traumatic experiences, which family members died? b. What happened after that? (Where did they stay, when did the child start going to school again? With whom did they stay/live?) 5. What was the difference between the pre-tsunami situation in the community / village and the situation after the tsunami? How bad was the damage to the houses, village, and existing infrastructures? How were the conditions of camps / barracks, water and sanitation, and livelihood after the tsunami? 6. What kind of situations remained scary for the children and may have stimulated trauma reactions?
Trauma reactions and adaptation	<ol style="list-style-type: none"> 7. The reactions following the tsunami: <ol style="list-style-type: none"> a. What were the child's reactions soon after the tsunami? How intense were these reactions? b. How long did the intense reactions persist? What helped them to calm down? 8. Changes in the child's behaviour and emotions after the tsunami: <ol style="list-style-type: none"> a. Were there any differences in the child's character, behaviours, emotions, and attitudes at home and with their peers after the tsunami? b. What were the differences? c. What kinds of trauma reactions presently still exist with regard to the tsunami? <ul style="list-style-type: none"> • Does the child often recall the tsunami and think of the deceased loved ones? • Does the child still become upset when people discuss the tsunami with him / her? • Does the child often cry / mourn / daydream? Does it look sad? Does it have nightmares? Does it long for beloved ones who died in the tsunami? Does the child raise any questions regarding why they (the beloved ones) died? • Is the child easily irritated or angry, more so than before the tsunami? • Has the child's ability to concentrate when in school or during

Topics	Interview guide / questions
	<p>studying decreased significantly?</p> <ul style="list-style-type: none"> Does the child often feel afraid or anxious? What makes him/her anxious? Did any new problems arise after the tsunami that did not exist before? Do you think the child has recovered? When was the point of recovery? What made the child recover? If the child has not yet recovered, what factors do you think thwart recovery? <p>9. Which child in the village, who lost members of the family, do you see as a strong child and which child do you see as a fragile / vulnerable child that may continue to have problems later on? Why?</p>
Internal aspects	<p>10. Positive things / personal strengths of the child</p> <ol style="list-style-type: none"> What is your general impression of the child in positive terms? What were positive characteristics of the child before the tsunami? What positive characteristics does the child still have and which ones disappeared after the tsunami? Is there any positive behaviour that appeared only after the tsunami? <p>11. Personal limitation / problems</p> <ol style="list-style-type: none"> What is your general impression of the child in negative terms? What kind of problematic behaviours does he/she show? Did these problematic behaviours occur already before the tsunami, or did these behaviours appear after the tsunami? <p>12. Coping style:</p> <ol style="list-style-type: none"> When the child had problems, what would he/she do? Do you think it is a good way to cope? When having problems, did the child talk about the problems or his/her feelings with his/her family members? <ul style="list-style-type: none"> If yes, with whom? If not, is there a friend or someone else the child talks with about his/her problems? If there are people the child can talk with about his/her problems, who are they? <p>13. Study and intellectual aspiration and motivation</p> <ol style="list-style-type: none"> How was the child's motivation to study before and after the tsunami? Do you think study motivation is a problem or not? Why? How is the child's achievement before and after the tsunami? Do you think the child has problems at school? If yes, what kind of problems? Do you think that the child has problems to understand things or to follow the subjects at school? Why?
External aspects (Microsystems direct setting)	<p>level/</p> <p>14. How did the child's family members react to the tsunami?</p> <ol style="list-style-type: none"> What were the situations and reactions of the family members after the tsunami? <p>15. How did the family cope with the tsunami and the impact of the tsunami?</p> <ol style="list-style-type: none"> How did the family (parents and other family members) deal with the

Topics	Interview guide / questions
	<p>impact of the tsunami?</p> <ol style="list-style-type: none"> b. What is the 'hikmah'¹⁶ of the tsunami for the family? c. How do you see the family's future? d. What factors helped / did not help the child to cope with the impact of the tsunami? e. What factors helped / did not help the family to cope with all the changes and adversities due to the tsunami? <ol style="list-style-type: none"> 16. Did problems arise with child rearing after the tsunami? If yes, what were these problems and how did you / the family handle them? (especially problems related to family income and to changes in the child's behaviour) 17. The relationship of the child with his or her family before the tsunami. <ol style="list-style-type: none"> a. Who was the closest member of the family for the child? How close? b. How was the relationship with the deceased family members? c. How is the relationship with family members who are still alive? d. Did the child experience abuse? By whom? e. Was the child spoiled during childhood / before the tsunami? By whom? 18. The relationship of the child with his or her family after the tsunami. <ol style="list-style-type: none"> a. Who are the main caregivers of the child after the tsunami? b. Does the child have a close relationship with its caregivers? <ul style="list-style-type: none"> • If yes, is that expressed in daily life (caregivers' care and love for the child)? • If not, why not? Do parents/caregivers abuse the child? c. Who has the closest relationship with the child? d. Is there any person the child can trust to protect and fulfill his/her needs? e. Is there a person who can substitute the closest person who died? 19. Relationship with friends after the tsunami <ol style="list-style-type: none"> a. How are the situations of peers in the community? b. Does the child have a good friend? Who are close friends of the child? c. Do they have positive interactions or do you think the interactions are not good / not positive? Why? d. Do you think his/her friends can support him/her in a positive way? Why? e. Do you think he/she has problems with friends? If yes, what kind of problems? What did you do to handle these problems? 20. School situation after the tsunami. <ol style="list-style-type: none"> a. How is the child's motivation to go to school / to study? b. How is his / her achievement at school? c. Does he / she have problems with school? If yes, what problems? 21. Extended family / Close neighbourhoods <ol style="list-style-type: none"> a. How is the relationship between the child and its neighbours or members of the extended family? b. How supportive are the neighbours and members of the extended family? c. Are there any problems from neighbours or extended families? What

¹⁶Hikmah is a common term in Bahasa Indonesia to reflect the positive lessons or insights after an unfortunate event.

Topics	Interview guide / questions
External aspects (Larger social context)	kind of problems? How do they affect the family? What did the family do about that?
	22. Does the situation of the community / village after the tsunami differ from the situation before?
	23. How were the social relationships and cultural activities in the village / community before and after the tsunami?
	24. Is the child involved in the religious activities in the community? How intense is the involvement?
	25. Do you think that religion can help in the healing process after the tsunami? If yes, which religious beliefs help in the process of healing?
	26. Is the child involved in the activities or programs conducted by aid institutions? How active is the child's involvement?
	27. Do you think the dance and cultural activities the child is involved in are helping him/her to recover?
	28. Does the child have a close relationship with mentors or social workers?
	29. Were there conflict situations in this village / village of origin? How bad was the conflict in the village?
	30. Do you think that conflict situations influenced the community and how people struggle with their life after the tsunami?

Appendix 2 Observation Guide

Village : _____	Date & time: _____
Activities: _____	Observer : _____

Aspects	Name: Description
DURING PSYCHOSOCIAL ACTIVITIES	
Interaction with friends	
Pro-social behaviour (helpful to friends, attentive to friends' needs, does not help, does not care)	
Relationship with friends (easily mingling with friends, only playing with certain friends, plays alone, withdraws / does not want to play with friends, has more than one friend as peer group)	
Attitude / behaviour toward friends (friendly, calm, silent, arrogant, rude, cheerful)	
Friends' responses to subject (supportive, caring, friendly, happy to play with him/her, cooperative, detached, rude, cynical, neglectful, envious, do not like to play with her/him)	
Interaction with social workers and research team (mentors)	
Pro-social behaviour (helpful to mentors, caring and attention to mentors' needs)	
Relationship with mentors (easily communicates with mentors, detached / withdrawn from relationships with mentor, shows respect, polite, demanding)	
Cooperation during activities (cooperative, obedient, reluctant, disturbing, rebellious)	
Attitude / behaviour toward mentors (friendly, calm, silent, shy, rude, cheerful)	
Mood / Emotions / Signs of trauma reactions	
Happy, enthusiastic, cheerful	
Unhappy, sombre, gloomy, sad	
Easily angry, easily irritated, easily disappointed, surly, unfriendly, hostile	
Anxious, nervous, worried	
Unresponsive, withdrawal	
Day dreams, blank or absent-minded	
Special attitudes, behaviours, or characteristics of the child that are not at the list	
AT HOME and SURROUNDINGS	
Interaction with siblings	
Pro-social behaviour (helpful to siblings, caring and attention to siblings' needs)	
Relationship with siblings (caring, supporting, warm relationship, quarrelling, attentive to siblings, detached relationship / not close to each other)	

Aspects	Name: Description
Siblings' responses to subject (warm, supportive, caring, detached, rude, cynical)	
Interaction with parents	
Pro-social behaviour (helpful to parents, caring and attention to parents' needs, helps with domestic chores)	
Relationship with parents (close, respectful, detached, not so close, rebellious, polite, obedient)	
Parents/caregiver's responses to subject (warm, supportive, care, attentive, helpful, detach, rude, cynical)	
Interaction with friends at home and surroundings	
Pro-social behaviour (helpful to friends, caring and attention to friends' needs)	
Relationship with friends (easily mingles with friends, likes to play alone, withdraw / does not want to play with friends, has more than one friend as peer group, likes to play with gangs or groups characterized by risky behaviours such as smoking, motor racing)	
Attitude / behaviour toward friends (friendly, calm, silent, arrogant, rude)	
Interaction with neighbours	-
Pro-social behaviour (helpful to neighbours, caring and attention to neighbours' needs)	
Neighbours response to subject (warm, supportive, caring, attentive, helpful, detached, rude, cynical)	
Personal characteristics (through observation in every setting)	
Leadership (leads friends, gives instructions to friends to do activities)	
Confidence (can speak in front of people comfortably/with confidence).	
Being easy going (when knowing problems does not react panicky but can be relaxed and does not feel disturbed)	
Sense of humour (easy to laugh, creates jokes, makes funny face or gestures)	
Initiative (starts to do something or to help without being told / instructed)	
Showing aggressive behaviour (fights with friends, hits other people, is offensive, mad at other people)	
Harassing friends, bothering or disturbing friends, yelling at friends	
Egoistic behaviour (focuses on the fulfilment of his/her own needs and does not really care of other's needs)	
Housing conditions	
Size (very small, enough space, large enough for people who lived there, with or without partition in separate rooms)	
Tidiness (neat, clean, dirty, messy, mouldy)	
Comfort (leak, very hot or very cold, unpleasant, comfortable, partly destroyed)	

Appendix 3 Matrix of Analysis

Aspects	Pre-tsunami	At the time of the tsunami	First months after	One year after
Identity & Demographics	<u>Name:</u> <u>Sex:</u> <u>Born:</u> <u>Village:</u>	<u>Age:</u> <u>School:</u> <u>Grade:</u>	<u>Place of refuge :</u> <u>School:</u>	<u>Camps/barracks:</u> <u>School:</u> <u>Grade:</u> <u>Age:</u>
Traumatic experiences during the tsunami				
Exposure to danger and adversities		<u>Way to escape from the waves:</u> <u>Injuries:</u> <u>Family separation:</u> <u>Other terrifying experiences:</u>	<u>Stressors and other traumatic experiences in the form of terrifying events such as earthquakes, rainstorms, etc:</u>	<u>Stressors and other traumatic experiences in the form of terrifying events such as earthquakes, rainstorms, etc:</u>
Family structure and family loss	<u>Caregivers:</u> <u>Siblings:</u> <u>Relatives living in the same house:</u>	<u>Family members who died:</u> <u>Family members who survived:</u>	<u>Caregivers:</u> <u>Siblings and relatives living in the same shelters:</u>	<u>Caregivers:</u> <u>Siblings and relatives living with the family:</u>
Level of functioning and traumatic reactions				
Level of functioning and trauma reactions	<u>Academic functioning:</u> <u>Functioning at home:</u> <u>Functioning with peers:</u>		<u>Traumatic grief reactions:</u> <u>Daily functioning:</u> <u>Point of recovery:</u>	<u>Academic functioning:</u> <u>Functioning at home:</u> <u>Functioning with peers:</u> <u>Trauma reactions (informants' reports):</u> <u>TSCC-A (self-report)</u>
Factors in the bio-ecological systems				
Personal level				
Individual characteristics	<u>Positive characteristics:</u> <u>Negative characteristics</u>		<u>Changes in behaviour:</u>	<u>Changes in behaviour:</u>
Coping			<u>Religious coping:</u> <u>Active participation:</u>	<u>Religious coping:</u> <u>Active participation:</u>

Aspects	Pre-tsunami	At the time of the tsunami	First months after	One year after
Microsystems				
Family	<u>Relationship with family members:</u>	<u>Situation of the family at the disaster:</u> <u>Destruction of the house:</u>	<u>Relationship with family members:</u> <u>Grieving and trauma reactions in the family:</u>	<u>Relationship with family members:</u> <u>Parental support:</u> <u>Parental threat:</u> <u>Housing and finance</u>
Peers	<u>Pattern of relationship with peers:</u>		<u>Conditions and situations of peers:</u> <u>Interaction, support, and relationship with friends</u> <u>Challenges from peers:</u>	<u>Characteristics of peers:</u> <u>Interaction, support, and relationship with friends:</u> <u>Challenges from peers:</u>
Mesosystems				
Extended family and neighbours	<u>Relationship with extended family and neighbourhood:</u>		<u>Interaction, support, and relationship with extended family and neighbours:</u> <u>Threat from the neighbourhoods:</u>	<u>Interaction, support, and relationship with extended family and neighbours:</u> <u>Threat from the neighbourhoods:</u>
Humanitarian / psychosocial programs for the children in the community			<u>Assistance for children during emergency phase:</u> <u>Interaction, support, and relationships with humanitarian workers:</u>	<u>Availability of programs & access to them:</u> <u>Interaction, support, and relationships with social workers/ mentors:</u>
Exosystem and Macrosystem				
The community / village situation	<u>Social interaction and relationships in the village / community :</u>	<u>Destruction of the community / village:</u>	<u>Changes in the neighbourhood in the village / community:</u> <u>Interaction, support, and relationship with neighbours:</u> <u>Challenges from the neighbourhoods:</u>	<u>Interaction, support, and relationship with neighbours:</u> <u>Challenges from the neighbours:</u>

Aspects	Pre-tsunami	At the time of the tsunami	First months after	One year after
Religious program in community				<u>Availability of programs and access to them:</u> <u>Interaction, support, and relationship with religious leaders:</u>
Values and cultural beliefs in Aceh	<u>Religious beliefs and practices in the community:</u>		<u>Beliefs / values / rituals /practices involved in the process of recovery:</u>	<u>The interpretation of the tsunami</u> <u>Beliefs / values / rituals /practices strengthened the child and the family to cope with adversities:</u> <u>Beliefs/values/rules put the child in difficult situations:</u>

Summary

The 2004 tsunami destroyed almost every aspect of Acehese life. A large number of children had lost their loved ones. The children were susceptible to the negative impact of this tragic event because the tsunami deprived them of their basic needs and separated them from their loved ones who could provide them with care and protection (Suyanto, 2005). The available caregivers were also in a stressful situation. It was considered quite possible that the tsunami-related traumas might aggravate existing vulnerabilities, because Aceh had experienced armed conflict between the Free Aceh Movement (GAM) and the Indonesian government.

Resilience studies revealed that after experiencing tragic events, about 10-15% of survivors continue to suffer from psychological dysfunction (Bonanno, 2004). This means that most child survivors do not continue to have emotional or psychological disturbances, but find ways to adapt to the changes and challenges after the events (Masten, 2001).

Resilience is a pattern of positive adaptation in the context of significant risk or adversity (Luthar & Zelazo, 2003; Masten & Powell, 2003; Riley & Masten, 2005; Rutter, 1990; Werner, 2005; Wright & Masten, 2006). It is a process of, capacity for, or pattern of positive adaptation during or following exposure to adverse experiences (Masten & Obradovic, 2008). Positive (successful) adaptation in the face of adversities refers to resilience, and negative (problematic) adaptation refers to vulnerability (Agaibi & Wilson, 2005; Zucker, Wong, Puttler, & Fitzgerald, 2003).

Masten and Obradovic (2008) described positive and negative patterns of adaptation in the aftermath of a massive trauma such as a natural disaster. As positive or resilience patterns, there are *(Stress) Resistance*, *Recovery*, and *Positive Transformation* patterns. *(Stress) Resistance* refers to “patterns of reasonably steady and positive adaptive behaviour in the presence of significant threats”. *Recovery* happens when there is a decline in the individual’s adaptive functioning because of the acute adversity, followed by a return to the previous positive level or previous adaptive functioning as the crisis abates. *Positive Transformation* occurs in situations when a person has an improved level of functioning in response to a crisis and its aftermath. As negative or vulnerable patterns, there are *Delayed Breakdown*, *Breakdown without Recovery*, *Persistent Maladaptive* or *Negative Transformation* patterns. When *Stress Resistance* is followed by a breakdown in functioning, this is called a *Delayed Breakdown*. A decline in functioning without improvement reflects a *Breakdown without Recovery* pattern. *Persistent Maladaptive* or *Negative Transformation* patterns occur in situations in which the crisis aggravates the situation for an individual who already functions poorly.

In this study, we follow Masten and Obradovic’s patterns of adaptation classification, which represent resilience and vulnerability. As required by their classification, the level of

functioning of the children (which includes academic functioning, functioning at home, and functioning with peers) was measured during three consecutive periods of time (Masten & Obradovic, 2008), i.e., before, immediately after, and one year after the tsunami.

Children's adaptation to adversities is influenced by risks and protective factors (Garmezy, Masten, & Tellegen, 1984; Masten & Wright, 2009). Risk factors are characteristics of individuals or environment that may inhibit normal development and induce negative outcomes (Cumming, Davies, & Campbell, 2000; Riley & Masten, 2005; Wright & Masten, 2006). Protective factors are qualities of a person or context that may act as a buffer and can induce better outcomes in the event of trauma, crisis, or other forms of adversity (Mohr, 2002; Riley & Masten, 2005; Werner, 2005; Wright & Masten, 2006). An individual is rarely confronted with only a single risk factor, as the presence of a risk usually means the presence of other related risks. Protective factors usually also co-occur. The more sources of protection a child has, the more likely s/he is to adapt well when facing adversities (Wright & Masten 2006).

The tsunami was a massive disaster that destroyed almost all systems in Aceh that were very important for children's development. Therefore, it is important to use Bronfenbrenner's bio-ecological theory of human development to look at Acehnese children's resilience and vulnerability. The multisystem characteristics of Bronfenbrenner's theory form a suitable framework for gaining a thorough understanding of the adaptation process with reference to many different levels of the context in which an individual lives.

The *Process – Person – Context – Time* model is the essence of Bronfenbrenner's theory. He considers the *proximal process* - the complex interaction occurring over an extended period of time between the developing person and the people, objects, and symbols in his/her everyday context - as the key influence in human development (Bronfenbrenner & Morris, 1998; Bronfenbrenner, 2005). Bronfenbrenner also stated that *person* characteristics have important roles in changing an individual's context (Bronfenbrenner & Morris, 1998; Lerner, 2005; Tudge, Mokrova, Hatfield, & Karnik, 2009). We focus on gender, coping, and certain personal characteristics (sociability, obedience, pro-social behaviour, enthusiasm, and irritability) at the personal level. Regarding the *context*, there are four interrelated ecological levels, i.e., microsystem, mesosystem exosystem, and macrosystem. We focus on family and peers as the microsystem, neighbourhood and adult mentors as the mesosystem, the role of non-government organizations as the exosystem, and kinship system as well as religion (Islam) as the macrosystem. *Time*, or the *chronosystem*, plays an important role in the bio-ecological theory. We understood that before and after the tsunami, there were significant changes in the context where the children lived and also in their personal aspects after the tsunami.

This study aims to attain understanding of the impact of the tsunami on the lives of the child participants and their environment. It specifically examines their patterns of adaptation and identifies important aspects within the children's bio-ecological systems that influenced their

resilience and vulnerability. The research questions of this study are: (1) What traumatic experiences did the children have during and immediately after the tsunami regarding exposure to danger, family loss, and changes in the family structure and relationships? (2) What were the traumatic grief reactions of the children immediately after the tsunami, their point of recovery, and the changes in their behaviour? (3) What were the post-tsunami physical and psychosocial conditions in the villages? (4) How did the kinship patterns in Aceh provide support and challenges for the children? (5) How did Islamic norms, beliefs, and values, and the religious practices in Acehese society influence the children in facing their daily lives following the tsunami? (6) What were the children's patterns of adaptation and their trauma symptoms one year after the tsunami? (7) How were the patterns of adaptation related to the risk and protective factors within the children's bio-ecological systems?

In order to answer the research questions, this study employed a mixed-method study using ethnographic, case study, and self-report approaches. These approaches allowed the researcher to gain a comprehensive and complete picture of the cultural and social situation and obtain in-depth information from each participant in the study. This research was not intended to generalize findings, but more to understand the process and the interactions among internal and external factors of the children that led to adaptive or maladaptive patterns.

We carried out the study in four villages: Terbeh, Tanjong, and Lampineung (located in Aceh Besar district), and Lambaro Skep (located in Banda Aceh). The degree of destruction of housing and infrastructure in the four villages was at least 75%. We approached these villages with the help of two NGOs.

We selected children aged from 10 to 15 years who were survivors of the tsunami. Approximately 165 children were involved in the initial assessment and 30 children met the additional criteria to be selected in the case study because they lost at least one nuclear family member. Eight of the 30 children moved to other places before the end of the period, which left 22 (ten boys and twelve girls) for the case study. We interviewed the children and at least four informants for each child. We held psychosocial activities and observed them in natural settings. We also used the Trauma Symptoms Checklist for Children (TSCC-A) to assess their trauma symptoms one year after the tsunami.

The ethnographic and case study results are described in Chapter 4. There are several themes about the traumatic experiences and level of danger during the tsunami, the changes in family structure and relationships, traumatic grief reactions, the post-tsunami financial and housing conditions, the relationships with peers, neighbours and social workers, and the religious practises in the community. In Chapter 5, we describe the children's patterns of adaptation and their trauma symptoms one year after the tsunami and analyse how the patterns of adaptation were related to risk and protective factors within their personal characteristics and

proximal environment (family, peers, and neighbours) using qualitative and quantitative analyses.

For qualitative analyses, we applied *pattern analysis*, *within group analysis*, and *between-group comparison*. In the pattern analysis, we classified each participant's pattern of adaptation based on his or her level of functioning before, immediately after, and one year after the tsunami. We also classified the children's trauma symptoms one year after the tsunami on the basis of their TSCC-A scores, and provided additional information about their trauma symptoms according to informants' reports. In the within-group analysis, we analysed characteristics of the children in each pattern regarding the presence of risk and protective factors in their proximal environment. In the between-group comparison, we compared the characteristics of each pattern with regard to: the loss of loved ones and traumatic grief reactions immediately after the tsunami, the children's individual characteristics before the tsunami, the changes in the structure of the family, protective factors from internal and external aspects, and risk factors from peers and neighbours. We carried out quantitative data analyses using the Mann-Whitney U test and Spearman's rho correlations.

Results

1. What traumatic experiences did the children have during and immediately after the tsunami regarding the exposure to danger, family loss, and changes in the family structure and relationships?

All twenty-two child participants of this study experienced life-threatening events, witnessed massive destruction of their homes and surrounding, and saw dead bodies almost everywhere around them. During the event, many children found themselves to be separated from their parents or other family members. They were frightened, shocked, and insecure. Following the tsunami, there were frequent earthquakes, rainstorms, and floods that exacerbated their traumatic reactions. All of these were added to the effects of the armed conflict that was still going on in this area. It is reasonable to assume that these children experienced traumatic events repeatedly (Type-2 trauma). Most of them lost family, relatives, friends, and/or close neighbours. The twenty-two participating children lost at least one of their family members.

Regarding the family loss and changes in the structure and relationships in the family, there were several changes in the relationship of the children with their caregiver(s) after the tsunami, with relationships sometimes deteriorating and sometimes improving, resulting in negative relationships for eleven children, mixed relationships for five, and supportive relationships for six children.

2. What were the traumatic grief reactions of the children immediately after the tsunami, their point of recovery, and the changes in their behaviour?

The children showed traumatic grief reactions for different lengths of time and to different degrees. It was reported that within a month, three children were crying less and did not have difficulty in maintaining their daily functioning. Seven children had the symptoms longer but for less than three months and their daily functioning was not much disturbed. Twelve children showed traumatic grief reactions for more than three months after the tsunami and their daily functioning was much disrupted.

The traumatic grief reactions shown by almost all participating children within the first days and the following weeks were crying with hysterical reactions, shock, depression, and numbness. Most of them were terrified by the tremors that occurred frequently in the period following the tsunami. All of this reminded them of the traumatic event and, as a result, most of the children felt very insecure, anxious, and afraid that another tsunami might occur.

The sources of recovery also varied: several children started to improve apparently because they were involved in psychosocial programs, other children because they met their friends in the village or in the camps, and several others because of the comfort provided by their extended families.

3. What were the post-tsunami physical and psychosocial conditions in the villages?

The destruction of the housing and villages meant that many children had to move. Some could still live in their partly destroyed house, but others had to move repeatedly to find shelter. Since there was a shortage of houses, many children had to stay in tents or barracks and this situation often lasted for over a year. Complaints about the unavailability of clean water and sanitation, the shortage of space, and the insufficient protection against the drastically changing weather conditions were frequently heard. Children lived in shelters of lower quality than before the tsunami.

Family incomes decreased significantly, because parents or caregivers lost their jobs so they had to struggle to fulfil their basic needs. The government had a policy of supporting each family with a very small monthly allowance, Rp. 90,000 (\pm US\$ 9) for each family member, but the payment of the money was not regular and was very often delayed for several months.

With regard to the physical conditions of the villages (the damage to the infrastructure, the overall conditions of the housing, water, and sanitation, and the location from the shoreline that could cause anxiety about future tsunamis), Lampineung had the worst physical living conditions. By contrast, Tanjong had much better physical conditions. The conditions in the two other villages, Terbeh and Lambaro Skep, were of a level between those of Lampineung and Tanjong.

Regarding the psychosocial programs, the most intensive implementation of the psychosocial programs for the children was in Terbeh, followed by Tanjong and Lambaro Skep. They conducted various activities and the social workers had a good relationship with the children. The psychosocial program in Lampineung was the least intensive. The weekly sessions were also very short, the types of activities were limited, and the relationship between the children and the social workers was not close.

Friends did not always provide support for the children. They sometimes provided challenges, notably when there were peers who tended to bully or mock other children, especially because they were orphans or because they had characteristics that their peers did not like, such as not being beautiful or sociable.

4. How did the kinship system in Aceh, manifested in lives of the neighbourhoods, support and challenge the children?

Due to the matriarchal marriage tradition in Aceh, *gampongs* commonly house many extended-family members from the mother's bloodline. Close neighbours are likely to consist of extended family members and thus provides possibilities for interaction among children, family, and peers.

In Aceh, as a close-knit society, close neighbours were in a position to interact with the children intensively and frequently. This condition brought support as well as challenges for the children. Support from neighbours was received in the form of care and help for the children when they faced difficulties or when the nuclear family could not provide adequate support. Challenges from the neighbours were in the form of gossip, cynical treatment, discrimination, social punishment, and other forms of negative treatment.

5. How did Islamic norms, beliefs, and values, and the religious practices in Acehnese society influence Acehnese children in facing their daily lives following the tsunami?

Islam and Acehnese customs cannot be separated, and Islamic teaching is embodied in almost all aspects of Acehnese life (Melalatoa, 2005). Religious beliefs and practices that were rooted in the lives of the Acehnese could restore the emotional conditions after suffering, and might help children to take a more positive view of the tsunami. The habit of praying and Koran-reading activities caused children to be often together with family, friends and other community members. Being connected with their cultural roots and maintaining the habits prevalent in their environment also might help children to feel that they were not suffering alone. Unfortunately, not all children maintained such practices. Among the twenty-two child participants, two children from Lampineung, three children from Lambaro Skep, and one child from Terbeh did not seem to cope in a religious way in facing the adversities after the tsunami.

6. What were the children's patterns of adaptation and their trauma symptoms one year after the tsunami?

One child had a *Stress Resistance* pattern, four had a *Positive Transformation* pattern, five had a *Recovered* pattern, and three had a *Recovering* pattern of adaptation. Three children had a *Going-down* pattern, five a *Breakdown without Recovery* pattern, and one child a *Persistent Maladaptive* pattern. Children with a *Stress Resistance* pattern were the most resilient, and children with a *Persistent Maladaptive* pattern were the most vulnerable. We compressed the seven categories into five, because two categories consisted of only one person.

Regarding the trauma symptoms one year after the tsunami, based on the results of the TSCC-A, most of the children had a normal level on all trauma symptoms scales. There were four children whose trauma symptoms were at a sub-clinical level on one of the following scales: Anxiety, PTS, or Dissociation. One child had a clinical level on the Anger scale and a sub-clinical level on the Depression and PTS scales. Four children were considered as having an invalid response for their TSCC-A scores because their Under-Response *T* scores were at or above 70.

7. How were the patterns of adaptation related to the risk and protective factors within the children's bio-ecological systems?

Within-group analysis and between-group comparison

With regard to the changes in the structure and relationship of the family, children in all patterns experienced changes in the structure of their family and the changes led to different patterns of parent/caregiver-child relationship after the tsunami. The differences found between the five patterns suggest that the levels of support and threat from parents or caregivers before and after the tsunami were very important factors that may explain why some children adapted positively after the tsunami and others negatively. Children who experienced more support than threat from family after the tsunami were able to adapt more positively. On the other hand, children who experienced more threat than support adapted more negatively.

Regarding individual characteristics before the tsunami, having at least one good internal characteristic (pro-social or enthusiastic behaviour) was a protective factor, especially for those who had to face many adversities from family, peers, and neighbours after the tsunami. Irritability was a risk factor, especially when family, peers, and neighbours posed potential risk. Gender was also an important factor to be addressed after the tsunami.

Peers' threat seemed to be common for the children because it was present in all patterns. On the other hand, neighbours' threat may have been a considerable risk factor for the children in their recovery process after the tsunami.

Religious coping, active participation in psychosocial programs, and peers' support were also very important protective factors in helping children to develop positive patterns of adaptation after the tsunami, because all children in four categories (except the Breakdown without Recovery) used religious coping and almost all of them in the four categories (except one child) actively participated in the psychosocial programs.

Regarding the support from an adult mentor, differences found between the five patterns suggest that support from an adult mentor was an important factor in achieving a positive pattern of adaptation. Support from neighbours was not a strong protective factor especially for children who experienced many threats from family, peers, and neighbours.

We noticed that several children possessed many risk factors and had hardly any protective factors. Such children are vulnerable to developmental problems later on.

Quantitative analyses

The children's patterns of adaptation differed significantly according to religious coping and active participation in psychosocial programs. Children who used religious coping had more positive patterns of adaptation than children who did not, with a large effect size ($ES = .77$). Children who actively participated in psychosocial programs also had more positive patterns of adaptation, with a large effect size ($ES = .61$). Gender had a tendency ($p < .08$) to differentiate the children's patterns of adaptation. Girls tended to have more positive patterns of adaptation than boys, and the effect size was medium ($ES = .40$).

Regarding the associations between the patterns of adaptation and variables at the environmental level, the children's pattern of adaptation was significantly related to family support, family threat, peers' support, peers' threat, neighbours' threat, and support from an adult mentor. Except for peers' threat, the effect size of each significant variable was large. Children who received family support or peers' support, or had a good relationship with an adult mentor had a more positive pattern of adaptation than children who did not, whereas children who experienced family threat or threat from peers or neighbours had a more negative pattern of adaptation than children who did not.

Pattern of adaptation was negatively correlated with level of irritability before the tsunami (Spearman $r = -.44$, $p < .05$). No significant correlations were found between the pattern of adaptation on the one hand, and level of sociability, obedience, pro-social behaviour, and enthusiasm before the tsunami on the other.

Regarding the relationship between the pattern of adaptation and the cumulative risk and cumulative protective factors, we found that the children's pattern of adaptation was positively correlated with the cumulative protective score (Spearman $r = .67$, $p < .001$) and negatively with the cumulative risk score (Spearman $r = -.74$, $p < .001$).

Lessons learned

No singular factor can lead to a positive or negative pattern of adaptation. Rather, processes of adaptation appear to depend on interactions of factors that are present at both personal and external levels. Therefore, it proved to be vitally important to apply Bronfenbrenner's bio-ecological theory of development in the context of this mass disaster, to better understand what helped children after the disaster and what did not.

We learned several important lessons from different levels of the children's bio-ecological systems:

1. Severe traumatic grief reactions soon after the tsunami needed to be addressed appropriately by adults or aid organizations in the community. Adults should be aware of how important it is to encourage children to express their emotions and support them.
2. The children's religious coping and active participation in psychosocial activities are significantly protective, and the roles of parents and religious leaders are important in this way of coping. The children's active participation in psychosocial activities also can not be separated from the intensity of the programs, the kinds of activities involved, and the opportunity to develop a supportive relationship with social workers.
3. The level of irritability before the tsunami was an internal risk factor for the children and, if combined with parental and neighbours' threat, it became a strong predictor of vulnerability.
4. A strong relationship characterized by warmth and guidance with at least one adult or caregiver who is not depressed appeared to be a prerequisite for a better and quicker recovery process.
5. When parents/caregivers were depressed or abusive, when their communication with the children was one-way and cold, and when they did not provide emotional support or even forbade the children to express their emotions, the children were in danger of developing negative pattern of adaptation. Therefore, it is important to address the emotional and physical needs of their caregivers. Programs should consider stabilizing or addressing parents' distress as a priority along with helping the children.

Recommendations

1. Interventions should encompass children's entire living situations, involving their families, peers, and community, and addressing their personal characteristics, with the chief aim to minimize risk factors and maximize protective factors.
2. After a disaster, children need to become involved in routine and normal activities they were engaged in during the pre-traumatic period, especially with respect to learning and playing. Where religion has an important role in the community, it is advisable to facilitate religious activities to increase positive feelings and a sense of togetherness with their community.

Group activities is important because they create a supportive and comforting environment for children.

3. Children with many risk factors need to be identified as early as possible, especially those who have lost the people closest to them, who live with a depressed or (potentially) abusive caregiver, and who suffered a very traumatic experience.
4. To strengthen the resilience of children, it is important to keep children active and engage them in meaningful activities such as practising traditional dance, handicraft activities, and structured psychosocial activities that connect them to their peers. These activities may stimulate cooperation and solidarity and improve relationships with their friends. Approaches towards children need to focus more on their personal strengths instead of on their 'negative behaviour' that seemed to increase following a disaster.
5. Effort should also focus on stabilizing caregivers' psychological emotions and helping them to function effectively, especially in taking care of their children through psycho-education sessions about trauma reactions, opportunities to share fears or concerns about their children as well as their own sorrow and problems with economics or child rearing, and through livelihood programs for parents who have lost their jobs.
6. Aid institutions need to assure the continuity and sustainability of the program. Social workers or mentors should not be present for only a short time and should be given the opportunity to build up personal relationships with the children and their caregiver(s). The termination of the psychosocial program should be well prepared and changes of mentors and social workers minimized, to prevent children from having a second traumatic experience by losing a trusted person again.
7. There is a huge need to train professionals such as psychologists or other mental health professionals with different cultural backgrounds to master the required skills in the field of psychological trauma.

Samenvatting

De tsunami van december 2004 veroorzaakte de dood van ca. 127.000 inwoners van Atjeh (Indonesië), onder wie vele kinderen. In deze studie zijn de ervaringen van kinderen die de tsunami overleefd hebben onderzocht tijdens en onmiddellijk na de tsunami en hun aanpassing aan de veranderde omstandigheden een jaar later. De studie geeft antwoord op zeven vragen.

1. Welke traumatische ervaringen hadden de kinderen tijdens en kort na de tsunami?
2. Wat waren hun traumatische leedreacties onmiddellijk na de tsunami?
3. Wat waren de gevolgen van de tsunami voor hun leven in de verwoeste dorpen waarin zij woonden na de tsunami?
4. Welke zorg ontvingen de kinderen die een of beide ouders verloren tijdens de tsunami van bloedverwanten na de tsunami?
5. Wat was de invloed van de Islam op het leven van de kinderen na de tsunami?
6. Welke patronen van aanpassing vertoonden de kinderen een jaar na de tsunami?
7. In hoeverre waren die patronen afhankelijk van risico- en protectieve factoren in hun nieuwe bio-ecologische omgeving?

Er werd onderzoek gedaan in vier dorpen op Atjeh: Terbeh, Tanjong, Lampineung en Lambaro Skep. De onderzoeksgroep bestond uit 10 jongens en 12 meisjes in leeftijd variërend tussen de 10 en 15 jaar. Over elk kind werd informatie verzameld bij tenminste vier informanten die het betreffende kind goed kenden. Bovendien werden de kinderen geobserveerd tijdens het dagelijks leven in hun dorp en tijdens door NGO's georganiseerde psychosociale activiteiten. Bij de kinderen zelf werd een jaar na de tsunami de Trauma Symptoms Checklist for Children afgenomen. In de studie werd gebruik gemaakt van een mixed-method benadering. Er werden zowel kwalitatieve als kwantitatieve gegevens verzameld waarbij gebruik werd gemaakt van een etnografische benadering, van case-studies en zelf-rapportages van de kinderen.

Resultaten

1. Traumatische ervaringen tijdens en kort na de tsunami

Alle 22 kinderen ervoeren levensbedreigende omstandigheden tijdens en kort na de tsunami. Vele kinderen verloren hun vader en/of moeder en een of meer zussen en/of broers. Na de tsunami waren vele kinderen gescheiden van hun ouders. Zij waren in shock. Voor alle kinderen veranderden de levensomstandigheden dramatisch. Voor elf kinderen had dat negatieve gevolgen voor de relatie met hun ouders of nieuwe verzorgers. Zes kinderen kregen na de tsunami een betere relatie met hun ouders/verzorgers en voor vijf kinderen waren er zowel positieve als negatieve gevolgen.

2. Traumatische leedreacties en herstel

Alle kinderen vertoonden traumatische leedreacties na de tsunami. Er was sprake van hysterische reacties, shock, depressieve gevoelens en gevoelloosheid. Drie kinderen herstelden daarvan binnen een maand en zeven kinderen binnen drie maanden, maar het leven van twaalf kinderen was zo ontwricht dat ze ook na drie maanden nog zeer ernstige trauma's ervoeren.

3. Fysieke en psychosociale omstandigheden in de dorpen na de tsunami

Vele huizen waren verwoest tijdens de tsunami. Vele kinderen en hun ouders/verzorgers leefden maandenlang in tenten of barakken. Er waren klachten over sanitaire voorzieningen, gebrek aan ruimte en onvoldoende beschutting tegen slechte weersomstandigheden. Ouders hadden hun baan verloren en er was nauwelijks voldoende inkomen om in het levensonderhoud van de gezinsleden te voorzien. Positief was wel dat er in alle dorpen psychosociale activiteiten werden georganiseerd door NGO's. Dat gaf met name de kinderen gelegenheid hun leed te delen met anderen.

4. De rol van bloedverwanten na de tsunami

Het leven op Atjeh wordt gekenmerkt door een matriarchale familiestructuur en hechte gezins- en familierelaties. Familieleden wonen vaak in dezelfde kampong en waren vaak in staat en bereid de zorg voor kinderen die hun ouders verloren hadden over te nemen na de tsunami. Voor sommige kinderen pakte dat goed uit, voor andere niet. De kampong bood ook de mogelijkheid voor veel onderling contact tussen de kinderen, hetgeen voor vele kinderen een heilzame werking had.

5. De rol van de Islam na de tsunami

De Islam speelt een belangrijke rol in het leven van de inwoners van Atjeh. Meermalen per dag bidden zij en kinderen worden intensief betrokken bij religieuze vieringen. Ook die vieringen boden kinderen gelegenheid hun leed met elkaar te delen. Ook hun sterk geloof in de Islam droeg bij aan de verwerking van hun leedgevoelens. Zes van de 22 kinderen bezochten geen religieuze bijeenkomsten. Dit had negatieve gevolgen voor hun aanpassing na de tsunami. Een jaar na de tsunami vertoonden ze nog steeds sterke terugval in hun dagelijks functioneren.

6. Patronen van aanpassing na de tsunami

Een jaar na de tsunami vertoonden de meeste kinderen een positief patroon van aanpassing. Dat gold niet voor zes kinderen. Zij functioneerden in hun dagelijks leven

onaangepast. In deze studie werden zeven patronen van aanpassing onderscheiden op basis van het functioneren van de kinderen in het gezin, op school en met leeftijdgenoten voor, direct na en een jaar na de tsunami. Eén kind vertoonde stressbestendigheid. Kort na de tsunami was er bij haar enige terugval maar zowel voor als een jaar na de tsunami functioneerde zij op uitstekend niveau. Bij vier kinderen was er sprake van een positief transformatiepatroon. Zij functioneerden een jaar na de tsunami zelfs beter dan ervoor. Vijf kinderen vertoonden een patroon van herstel. Een jaar na de tsunami functioneerden zij op hetzelfde positieve niveau als ervoor. Van een zich herstellend patroon was sprake bij drie kinderen. Zij vertoonden een sterke terugval in functioneren kort na de tsunami, maar functioneerden op acceptabel niveau een jaar later, zij het niet zo goed als voor de tsunami. Drie kinderen vertoonden een “going down” patroon. Zij functioneerden een jaar na de tsunami veel minder goed dan ervoor, maar toch was er geen sprake van negatief functioneren een jaar later. Bij vijf kinderen kon gesproken worden over een breakdown zonder herstel patroon. Zij functioneerden goed voor de tsunami, maar onaangepast een jaar erna. Ten slotte vertoonde één meisje een persistent onaangepast patroon. Zij functioneerde zowel voor als een jaar na de tsunami onaangepast.

7. Samenhangen van patronen van aanpassing met risico- en protectieve factoren

Kinderen met een positief aanpassingspatroon hadden vrijwel allen een goede relatie met hun ouders/verzorgers na de tsunami. Gebrek aan ondersteuning door ouders/verzorgers ging vaak gepaard met een negatief patroon van aanpassing. Kinderen die positieve karakterkenmerken vertoonden voor de tsunami waren beter in staat zich aan te passen na de tsunami dan kinderen die ook al voor de tsunami gekenmerkt werden door negatieve karaktereigenschappen. Meisjes wisten zich beter aan te passen dan jongens. Negatieve ervaringen met buurtgenoten en leeftijdgenoten maakten de aanpassing moeilijker. Betrokkenheid bij religieuze vieringen, steun van vrienden, deelname aan psychosociale activiteiten en ondersteuning van een NGO-mentor droegen bij aan succesvolle aanpassing. Ook werd gevonden dat naarmate er meer protectieve en minder risicofactoren waren in de leefomgeving van de kinderen, zij zich beter hadden aangepast een jaar na de tsunami.

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Curriculum Vitae

Yohana Ratrin Hestyanti was born on April 7, 1973 in Klaten, Indonesia. She received her Bachelor's degree in 1996 from the Faculty of Psychology at the Gadjah Mada University, Yogyakarta and then continued to study from 1996 until 1998 as a psychologist at the same university. During her study in Yogyakarta, she was involved in an NGO dealing with female street children. She worked one year for an NGO focusing on NGOs' networks and started to work as a lecturer at the Faculty of Psychology, Atmajaya Catholic University of Indonesia in 1999. Her area of interest is on children with traumatic experiences, focusing on trauma, recovery, and resilience. She has had many experiences dealing with children in special need of protection, such as abused children, children in conflict areas, sexually exploited children, and children in a post-disaster situation. She is a trainer and also a curriculum developer for trainings programs regarding psychosocial responses after a disaster for humanitarian workers.